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ACCOUNTS AND PAPERS:

*FORTY-FIVE VOLUMES.*

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—(4.)—

NAVY ESTIMATES;

NAVY, &c.

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Session

8 February — 14 August 1877.

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VOL. LII.

1877.

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# ACCOUNTS AND PAPERS:

1877.

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# NAVY ESTIMATES

FOR

THE YEAR

1877-78,

WITH APPENDIX.



[ACCOUNT of NAVAL OLD STORE MONEYS and EXTRA RECEIPTS in 1875-76.]

(PRESENTED TO PARLIAMENT BY COMMAND OF HER MAJESTY.)

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*Ordered, by The House of Commons, to be Printed,  
20 February 1877.*

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STATEMENT showing the NET COST of the SERVICES provided for in the NAVY ESTIMATES for the Financial Years 1875-76, 1876-77, and 1877-78, after taking into account the EXTRA RECEIPTS of the NAVAL DEPARTMENT payable into the EXCHEQUER.

(Prefixed to the NAVY ESTIMATES in accordance with Treasury Minute of 12th December 1863.)

		£.	s.	d.
1875-76 :				
Navy Estimates, 1875-76	- - - - -	10,825,194	-	-
Add,—				
Excess of Deficits over Surpluses on the Ordinary Grants -	- }	75,511	2	3
(Deficits, 158,472 l. 18 s. 11 d.; Surpluses, 82,961 l. 16 s. 8 d.) - }				
Abate,—		10,900,705	2	3
Extra Receipts and Repayments, as per Statement shown at page 208 of these Estimates (1st April 1875 to 31st March 1876)		397,197	17	8
Net Amount of Expenditure for Naval Services for the Year 1875-76, after deducting Extra Receipts and Repayments paid into the Exchequer - - - - -	£.	10,503,507	4	7
1876-77 :				
Navy Estimates, 1876-77	- - - - -	11,288,872	-	-
Abate,—				
Extra Receipts and Repayments :	£.			
1st April 1876 to 31st December 1876	- 113,965			
1st January 1877 to 31st March 1877 (Estimated)	- 45,000			
Amount to be contributed by the Indian Government on account of the expense of the Fleet on the India Station (including one quarter estimated)	- 65,064			
		224,029	-	-
Net Amount, after deducting Estimated Extra Receipts and Repayments paid, or to be paid, into the Exchequer - - - }	£.	11,064,843	-	-
1877-78 :				
Navy Estimates, 1877-78	- - - - -	10,979,829	-	-
Abate,—				
Estimated Amount of Extra Receipts and Repayments - - - - -	£. 147,000			
Amount to be contributed by the Indian Government on account of the expense of the Fleet on the India Station -	70,000			
		217,000	-	-
Net Amount, after deducting Estimated Extra Receipts and Repayments to be paid into the Exchequer - - - }	£.	10,762,829	-	-

Admiralty, }  
20 February 1877. }

H. WALKER,  
Accountant General of the Navy, and  
Comptroller of Navy Pay.







incurred in the NAVAL DEPARTMENT in the Year 1877-78, showing the for the preceding Year, under the following Heads; viz.:

REQUIRED to be Voted for the Service of the Year 1877-78.	LAST VOTE for the Financial Year 1876-77.	1877-78.		EXPENDITURE in 1875-76.	Number of Vote.
		Increase.	Decrease.		
£.	£.	£.	£.	£. s. d.	
2,684,048	2,634,904	49,144	—	2,609,855 19 2	1
1,178,610	1,153,367	25,243	—	1,142,670 16 8	2
193,890	189,820	4,070	—	187,809 4 4	3
207,900	210,230	—	2,330	185,602 16 8	4
109,002	109,194	—	192	107,262 11 7	5
1,341,680	1,323,750	17,930	—	1,356,363 11 2	6
76,930	76,400	530	—	74,339 1 7	7
66,150	65,830	320	—	65,193 15 3	8
21,316	20,053	1,263	—	18,204 11 7	9
1,207,800	1,261,320	—	54,020	1,270,048 9 2	10
1,042,000	1,353,600	—	311,600	913,675 2 5	Sec. I.
545,715	569,249	—	23,534	625,086 19 3	Sec. II.
78,010	76,230	1,780	—	74,746 4 8	11
8,147	15,114	—	6,967	15,815 13 2	12
130,134	135,547	—	5,413	203,530 10 1	13
8,890,832	9,194,608	100,280	404,056	8,850,209 4 9	14
880,796	888,472	—	7,676	881,171 6 —	15
759,940	726,136	33,804	—	703,855 7 10	16
279,981	282,176	—	2,195	284,423 17 2	Sec. I.
10,811,549	11,091,392	134,084	413,927	10,719,659 15 9	Sec. II.
168,280	197,480	—	29,200	178,364 18 2	17
10,979,829	11,288,872	134,084	443,127	10,898,024 13 11	
NET DECREASE - - - £. 309,043				2,680 8 4	Balances Irrecover- able.
				£. 10,900,705 2 3	

GEORGE WARD HUNT.

H. R. YELVERTON.

A. W. A. HOOD.

GILFORD.

MASSEY LOPES.

Admiralty, }  
20 February 1877. }

ALGERNON EGERTON,  
Secretary.



# NOTE 1.

## WAGES, &c. TO SEAMEN AND MARINES.

I. ESTIMATE of the Sum which will be required in the Year ending on the 31st March 1878, to defray the EXPENSE of WAGES, &c. to SEAMEN and MARINES.

Two Million Six Hundred and Eighty-four Thousand and Forty-eight Pounds.

## II.

SUB-HEADS under which this Vote will be accounted for.

				1877-78.	1876-77.	INCREASE.	DECREASE.
				£.	£.	£.	£.
—WAGES OF AND ALLOWANCES TO SEAMEN AND MARINES AFLOAT (Minus the Sums deducted at end of Estimate) —				SEAMEN — — — — — 2,233,417			
				MARINES { WAGES, &c. — — — 173,626			
				{ GOOD-CONDUCT PAY 5,800			
				2,412,843	2,369,225	43,618	—
—EXPENSE OF RAISING MEN AND BOYS — — — — —				3,500	4,000	—	500
—SUBSISTENCE OF COMMISSIONED AND STAFF OFFICERS, ROYAL MARINES, ON SHORE — — — — —				54,364	53,683	681	—
				£.			
—SUBSISTENCE OF NON-COMMISSIONED OFFICERS AND PRIVATES, ROYAL MARINES, ON SHORE —				{ WAGES — — — 170,965			
				{ GOOD-CONDUCT PAY 11,600			
				182,565	176,870	5,695	—
—PRIZES FOR GOOD SHOOTING — — — — —				{ SEAMEN — — — 850			
				{ ROYAL MARINES — — — 800			
				1,650	1,650	—	—
—RECRUITING EXPENSES, ROYAL MARINES — — — — —				8,750	8,600	150	—
—COLONIAL PAY AND FIELD ALLOWANCES TO MARINES IN JAPAN — — — — —				376	376	—	—
—CONTINGENCIES, MARINE SERVICE — — — — —				20,000	20,500	—	500
				£.			
				2,684,048	2,634,904	50,144	1,000

Actual  
Expenditure,  
in 1875-76.

£.  
2,609,855

NET INCREASE - - - £49,144.

Note.—The estimated amount of Extra Receipts relating to this Vote to be paid into the Exchequer for the Year 1877-78 is £. 6,300, included in total sum of £. 217,000, shown in Prefatory Statement of these Estimates, p. 3.



Vote 1.—WAGES, &c. to SEAMEN and MARINES—*continued.*

## III.

## DETAILS of the foregoing.

Number Voted last Year.	Number for 1877/78.	WAGES, &c. TO SEAMEN.	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
		FLEET—SERVICE AFLOAT :		
		To defray the Charge of Wages (including Established Allowances) which shall come in course of payment in the year ending on the 31st March 1878, for the following Officers and Seamen to be employed in Her Majesty's Fleet, and other Services ; viz. :—	£.	£.
179	160	For Flag Officers in Commission, and their Retinues, One Hundred and Sixty in number - - - - -	56,591	53,622
30	30	For Officers superintending Her Majesty's Dockyards and Naval Establishments, and their Retinues, Thirty in number - - - - -	12,132	11,097
2,880	2,889	For Two Thousand Eight Hundred and Eighty-nine Commissioned and other Officers, above the rank of Subordinate Officers, to be employed in Her Majesty's Fleet - - - - -	694, 0	675,419
476	458	For Four Hundred and Fifty-eight Subordinate Officers (including Disposable Supernumeraries, and Naval Cadets under Training) - - - - -	12,166	13,369
835	823	For Eight Hundred and Twenty-three Warrant Officers - - - - -	106,421	108,696
29,030	29,740	For Twenty-nine Thousand Seven Hundred and Forty Petty Officers, Seamen, &c.	1,043,453	1,002,482
		For improved pay to Engineer Officers and to Engine Room Artificers - - -	5,600	—
		For increased pay of 2 d. a day to Seamen Class Men who re-engage - - -	10,500	—
		To provide for an extra day's pay on account of Leap Year, payable after 31st March 1876 - - - - -	—	4,000
33,400	34,100	<div>Viz. :<div><div><div>For Service in the Fleet - - - - -</div><div>Officers superintending Her Majesty's Dockyards, &amp;c. - - - - -</div><div>Other persons borne on Ships' books for service in Naval Establishments on Shore - - -</div></div><div><div>No.</div><div>33,736</div><div>30</div><div>384</div></div><div><div>£.</div><div>1,890,864</div><div>12,132</div><div>37,897</div></div></div><div>(amounts deducted on next page).</div></div>	1,940,893	1,868,685
		Boys :		
		For Six Thousand Three Hundred Boys, to be employed as follows :—		
7,000	6,300	<div>Viz. :<div><div><div>On Service in the Fleet - - - - -</div><div>Under Instruction in Training Ships - - - - -</div></div><div><div>No.</div><div>3,600</div><div>2,700</div></div><div><div>£.</div><div>38,457</div><div>24,850</div></div></div></div>	63,307	70,268
40,400	40,400	(For Details of the above, see "Explanatory Statement (A. 1)," APPENDIX, No. 1, page 150.)	£.	2,004,200
		COAST GUARD SERVICE :		
4,300	4,300	For Four Thousand Three Hundred Officers and Men, to be employed in Her Majesty's Coast Guard Service on Shore - - - - -	190,315	192,200
		(For Details of the above, see "Explanatory Statement (A. 1)," APPENDIX, No. 1, page 150.)		
44,700	44,700	- - - - - Carried forward - - - - -	£.	2,194,515
		Flag Officers - - - - -	16	18
		Commodore and Captains Superintendent of Dockyards - - - - -	6	5
		Flag Lieutenants, Secretaries, and Clerks - - - - -	58	61
		Coxswains, &c. (Seaman Class) - - - - -	22	22
		Domestics - - - - -	77	84
			* 179	† 190

1,940,893

1,868,685

Vote 1.—WAGES, &c. to SEAMEN and MARINES—*continued.*

Number Voted last Year.	Number for 1877/78.	WAGES, &c. TO SEAMEN— <i>continued.</i>	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
			£.	£.
44,700	44,700	- - - - - Brought forward - - -	2,194,515	2,131,153
		TROOP SHIPS FOR INDIAN SERVICE :		
1,300	1,300	For One Thousand Three Hundred Officers, Seamen, and Boys to be employed in Troop Ships (five in number) for Indian Service (amount to be defrayed by Indian Government deducted below) - - - - -	65,513	66,275
46,000	46,000	TOTAL OF ALL SERVICES - - - £.	2,260,033	2,197,428
		(For Details of the above, <i>see</i> "Explanatory Statement (A. 1)," APPENDIX, No. 1, page 150.)		
		To provide for the Contingent Employment of Additional Commissioned Officers now on Half-Pay - - - - -	5,000	5,000
		To provide for Special Pay and Allowances to Officers and other Persons to be employed on particular Services - - - - -	29,773	33,480
		(For Details of "Special Pay, &c.," <i>see</i> "Explanatory Statement (A. 2)," APPENDIX, No. 2, page 168.)		
		To provide for Good Conduct Pay to Petty Officers and Seamen, after certain periods of Service, and for Gratuities in aid of an Outfit to Petty Officers, who may be promoted to be Warrant Officers - - - - -	50,000	50,000
		B.—To provide for raising Men and Boys for the Fleet - - - - -	3,500	4,000
		E.—To provide for Competitive Prize-firing with Rifled Great Guns and Small Arms - - - - -	850	840
46,000	46,000	TOTAL WAGES, &c., to SEAMEN in FLEET, COAST GUARD SERVICE on SHORE, and INDIAN TROOP SHIPS - - - - - £.	2,349,156	2,290,748
		Deduct,—As follows, included in the above, viz. :—		
		The Pay and Allowances of Officers superintending Her Majesty's Dockyards and Naval Establishments, and their Retinues; provision for the same being made in the Estimate for Dockyards, &c. (Vote 6, page 31), as part of the cost of those Establishments - - - - -	£. 12,132	
		The Pay and Allowances of Officers and Men (except Marines) belonging to the Navy, borne on Ships' books for Service in Naval Establishments on Shore; provision for the same being made in the respective Estimates for such Establishments (Votes 3 to 14). <i>See</i> detailed List at page 162 - - - - -	37,397	
		The Pay and Allowances of the Officers and Men (except Marines) of the five Indian Troop Ships, which will be defrayed by the Indian Government, viz.:—For Full Crews for five Ships during the Trooping Season, and for Reduced Crews for ditto during the Non-trooping Season - - - - -	£. 55,570	
		and	61,360	
		Repayment by Indian Government of 7-12ths of the Pay and Allowances of the Seamen who are to be discharged from the Troop Ships, and to be borne in the Imperial Reserves during the Non-trooping Season - - - - -	5,790	
			111,389	105,909
		NET TOTAL WAGES &c. to SEAMEN in FLEET and COAST GUARD SERVICE { A.—WAGES, &c. - - - 2,233,417 B.—RAISING MEN, &c. - - - 3,500 E.—PRIZES for GOOD SHOOTING 850	£. 2,237,767	2,184,839

(For Details of the foregoing Estimate, *see* "Explanatory Statements (A. 1 & 2)," APPENDIX, Nos. 1 and 2, pages 148, 162, and 168.)



Vote 1.—WAGES, &c. to SEAMEN and MARINES—*continued.*

Number Voted last Year.	Number for 1877/78.		REQUIRED for the Service of the Year 1877-78.	LAST VOTE for the Financial Year 1876-77.
		WAGES, &c. TO MARINES.		
		SERVICE AFLOAT AND ON SHORE:		
			£.	£.
185	185	To defray the Charge of Wages which shall come in course of payment in the year ending on the 31st March 1878, for One Hundred and Eighty-five Staff Officers, &c. of Royal Marines - - - - -	23,337	23,501
		To provide for additional expenses arising from readjustment of Marine Staff at Divisions (arrangements under consideration) - - - - -	1,000	—
320	320	For Three Hundred and Twenty Commissioned Officers of Royal Marines -	52,072	52,376
13,495	13,495	For Thirteen Thousand Four Hundred and Ninety-five Non-commissioned Officers and Privates of Royal Marines - - - - -	327,920	330,886
14,000	14,000			
		<div><div>Viz.:</div><div><div><div>Service Afloat, 7,000</div><div><div>A.—For Fleet - - - - -</div><div><div>For Naval Establishments on Shore (amount deducted below) - - - - -</div><div><div>For 5 Indian Troop Ships (amount deducted below) - - - - -</div></div></div><div><div>Service on Shore, 7,000</div><div><div>C.—Commissioned and Staff Officers - - -</div><div><div>D.—Non-commissioned Officers and Privates -</div></div></div></div><div><div>No.</div><div>6,773</div><div>127</div><div>100</div><div>300</div><div>6,700</div></div><div><div>£.</div><div>173,626</div><div>3,309</div><div>2,065</div><div>54,364</div><div>170,965</div></div></div></div><div><div>404,329</div><div>406,763</div></div></div></div>		
		To provide for Good Conduct Pay to Non-commissioned Officers and Privates of Royal Marines - - - - - <div><div>A.—Service Afloat - £. 5,800</div><div>D.—Service on Shore 11,600</div></div>	17,400	18,284
		E.—To provide for Prizes for Good Shooting, and for judging distance - -	800	810
		F.—To provide for Recruiting Expenses - - - - -	8,750	8,600
		G.—To provide for Colonial Pay and Field Allowances to Marines in Japan, &c.	376	376
		H.—To provide for Contingencies of the Marine Service (for Details of past Expenditure, see APPENDIX, No. 6, page 177) - - - - -	20,000	20,500
14,000	14,000			
		TOTAL WAGES, &c. TO MARINES - - - £.	451,655	455,333
		(For Details of the foregoing Estimate, see "Explanatory Statement (B.)," APPENDIX, No. 5, page 174.)		
			£.	
		Deduct,—The Pay, &c. of the Marines serving in Naval Establishments on Shore, as in the case of "Seamen" - - -	3,309	
			£.	
		The Pay, &c. of the Marines in the five Indian Troop Ships which will be defrayed by the Indian Government, as in the case of "Seamen," see previous page - - - - -	1,806	
		and		
		Repayment by Indian Government of 7-12ths of the Pay of the Marines discharged from the Troop Ships during the Non-trooping Season, as in the case of "Seamen" - - -	259	
			2,065	
			5,374	5,268
		NET TOTAL WAGES, &c. TO MARINES - - - £.	446,281	450,065
		(For the Total Charge for the Marines, see APPENDIX, No. 7, page 177.)		

Vote 1.—WAGES, &c. to SEAMEN and MARINES—continued.

RECAPITULATION OF THE FOREGOING ESTIMATE.

Number Voted last Year.	Number for 1877/78.		REQUIRED for the Service of the Year 1877-78.	LAST VOTE for the Financial Year 1876-77.																		
46,000	46,000	TOTAL WAGES, &c. TO SEAMEN IN FLEET, COAST GUARD SERVICE, AND } INDIAN TROOP SHIPS - - - - - }	£. 2,349,156	£. 2,290,748																		
14,000	14,000	TOTAL WAGES, &c., TO MARINES - - - - -	451,655	455,333																		
		<table><tr><th>Seamen and Boys.</th><th>Marines.</th><th>TOTAL.</th></tr><tr><td>For Fleet, &amp;c. - - - -</td><td>44,366</td><td>14,000</td></tr><tr><td>For Naval Establishments on Shore - - - - -</td><td>334</td><td>(127 included above.)</td></tr><tr><td>For Indian Troop Ships - -</td><td>1,300</td><td>(100 included above.)</td></tr><tr><td></td><td>46,000</td><td>14,000</td></tr><tr><td></td><td></td><td>60,000</td></tr></table>	Seamen and Boys.	Marines.	TOTAL.	For Fleet, &c. - - - -	44,366	14,000	For Naval Establishments on Shore - - - - -	334	(127 included above.)	For Indian Troop Ships - -	1,300	(100 included above.)		46,000	14,000			60,000		
Seamen and Boys.	Marines.	TOTAL.																				
For Fleet, &c. - - - -	44,366	14,000																				
For Naval Establishments on Shore - - - - -	334	(127 included above.)																				
For Indian Troop Ships - -	1,300	(100 included above.)																				
	46,000	14,000																				
		60,000																				
60,000	60,000	TOTAL - - - £.	2,800,811	2,746,081																		
60,000	60,000	TOTAL FORCE in the FLEET and COAST GUARD SERVICE, &c.																				
Deduct,—																						
Pay, &c. of Superintendents of Dockyards, &c. (carried to Vote 6, page 31) - - - - -			£. 12,132	£. -																		
Pay, &c. of Officers, Seamen, and Marines borne on Ships' Books for Service in Naval Establishments on Shore (carried to Votes 3 to 14)			37,897	3,309																		
Proportion of the Pay, &c. of the Officers and Men of the five Troop Ships for Indian Service, which will be defrayed by the Indian Government - - - - -			61,360	2,065																		
£.			111,389	5,374																		
			116,763	116,763																		
NET TOTAL - - - £.			2,684,048	2,634,904																		



## Vote 2.

### VICTUALS AND CLOTHING FOR SEAMEN AND MARINES.

I. ESTIMATE of the Sum which will be required in the Year ending 31st March 1878, to defray the EXPENSE of VICTUALS and CLOTHING for SEAMEN and MARINES.

One Million One Hundred and Seventy-eight Thousand Six Hundred and Ten Pounds.

II. SUB-HEADS under which this Vote will be accounted for.

	1877-78.	1876-77.	INCREASE.	DECREASE.	
	£.	£.	£.	£.	
A.—PROVISIONS RECEIVED UNDER CONTRACT, &c. - - - -	533,797	531,960	1,837	—	
B.—SAVINGS (PAYMENTS FOR PROVISIONS NOT TAKEN UP) - -	152,447	146,590	5,857	—	
C.—ALLOWANCES IN LIEU OF PROVISIONS AND FUEL, &c. - -	198,740	199,240	—	500	
D.—LIGHTS FOR SERVICE AFLOAT - - - - -	37,250	37,250	—	—	
E.—ALLOWANCES IN LIEU OF LIGHTS TO OFFICERS, &c., AFLOAT	12,600	12,600	—	—	
F.—FOR MESS TRAPS AND CONTRIBUTIONS IN AID OF MESS -	14,200	15,500	—	1,300	
G.—VICTUALLING STORES RECEIVED UNDER CONTRACT, &c. -	35,000	35,000	—	—	
H.—FREIGHT, LIGHTERAGE, &c., ON PROVISIONS AND VICTUALLING STORES - - - - -	13,000	13,000	—	—	
I.—SEAMEN'S CLOTHING, SOAP, AND TOBACCO - - - - -	269,056	255,666	13,390	—	
K.—MARINE CLOTHING AND APPOINTMENTS - - - - -	56,605	51,413	5,192	—	
L.—ALLOWANCES IN LIEU OF MARINE CLOTHING, &c. - - -	4,230	4,430	—	200	
M.—MARINE BARRACK STORES - - - - -	14,851	16,622	—	1,771	
N.—BEER MONEY AND EXCESS COST OF RATIONS FOR ROYAL MARINES ON SHORE - - - - -	28,400	31,189	—	2,789	
	1,370,176	1,350,460	26,276	6,560	Actual Expenditure in 1875-76.
Abate,—					£.
O.—CREDITS FOR CLOTHING, USE OF MESS TRAPS, &c. - - -	191,566	197,093	—	5,527	
	£. 1,178,610	1,153,367	26,276	1,033	1,142,670

NET INCREASE - - - £. 25,243.

*Note.*—The Estimated amount of Old Stores and Extra Receipts relating to this Vote, to be paid into the Exchequer for the Year 1877-78, is 20,000 £. included in total sum of 217,000 £. shown in Prefatory Statement of these Estimates, page 3.

Vote 2.—VICTUALS and CLOTHING for SEAMEN and MARINES—continued.

II. DETAILS of the foregoing Charges.

		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
PROVISIONS, &c.		£.	£.
46,682	For the Purchase of Provisions and Victualling Stores and other Charges for Forty-six thousand Six hundred and Eighty-two Men and Boys, including Seven thousand Royal Marines, and Two thousand Seven hundred Boys in Training Ships to be employed in Her Majesty's Fleet and Coast Guard Service Afloat, for One Year, ending the 31st March 1878;  also,—  For the Purchase of Provisions and Victualling Stores and other Charges for the undermentioned Services, during the same period; viz.:		
4,300	For Four thousand Three hundred Men to be employed in Her Majesty's Coast Guard Service, and borne on the Books of District Ships for Service on Shore;		
20,000	For Twenty thousand Seamen of the Royal Naval Reserve when on Drill Afloat;		
400	For Four hundred Seamen and Marine Pensioner Reserve.		
		1877/78.	1876/77.
A.—For Provisions:		£.	£.
	For the Fleet and Coast Guard Service Afloat - - -	529,314	528,022
	For Crews turned over from Indian Troop Ships - - -	4,483	3,938
		533,797	531,960
B.—For Savings (Payments for Provisions not taken up):			
	For the Fleet and Coast Guard Service Afloat - - -	152,447	146,590
		152,447	146,590
C.—For Money Allowances in lieu of Provisions to Officers and Men borne on Ships' Books but not Victualled:			
	For the Fleet - - - - -	65,000	65,000
	For Coast Guard Service on Shore - - - - -	98,000	98,500
	For Royal Naval Reserve - - - - -	35,090	35,090
	For Seamen and Marine Pensioner Reserve - - - - -	650	650
		198,740	199,240
D.—For Lights for Service Afloat - - - - -		37,250	37,250
E.—For Money Allowance in lieu of Lights to Officers Afloat - - - - -		12,600	12,600
F.—For Mess Traps and Contributions in aid of Mess; viz.:		£.	
	Allowance to Stewards for Care of Mess Traps - - - - -	1,200	
	Admiralty Contributions in Aid of Mess - - - - -	1,000	
	Purchase of Mess Traps - - - - -	12,000	
		14,200	15,500
G.—For the Purchase of Victualling Stores; viz.:			
	Coals for Victualling Yards, Casks, Packages, and Small Stores - - - - -	35,000	35,000
H.—For Freight, Lighterage, and other Charges on Provisions and Victualling Stores -		13,000	13,000
Carried forward - - - - -		997,034	991,140



Vote 2.—VICTUALS and CLOTHING for SEAMEN and MARINES—*continued.*

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
Brought forward - - -	£. 997,034	£. 991,140
CLOTHING, &c.		
I.—To provide for Seamen's Clothing, Soap, and Tobacco, for the Year 1877-78 -	206,022	186,853
To provide for Commuted Allowances in lieu of Gratuitous Issues of Clothing, &c., to Seamen, Boys, and Marines, for Coaling Her Majesty's Steam Vessels; of Bedding to Seamen and Boys on First Entry, and of Clothing to Ten Years' Continuous Service Men - - - - -	26,528	30,975
To provide for Gratuitous Issue of Half Boots (annually) to Marines serving Afloat - - - - -	2,900	2,900
To provide Dresses for Marines doing Duty as Officers' Servants - - -	1,362	1,226
To provide for Gratuitous Issues to Working Parties of the Reserve, Depot Ships, and for Wear and Tear of Clothes - - - - -	5,500	6,500
To provide Clothing, &c., for the use of 1st, 2nd, and 3rd Class Reserve Men	12,744	12,212
To provide an Allowance towards the Kits of Boys on entry - - -	14,000	15,000
K.—To provide for Clothing and Appointments of Royal Marines, for making up and altering Marine Clothing, and for the Gratuitous Issue of Half Boots and Blue Serge Tunics to Royal Marines - - - - -	56,605	51,413
L.—For Money Allowances, in lieu of Clothing, to Royal Marines - - -	4,230	4,480
M.—To provide for Marine Barrack Stores - - - - -	14,851	16,622
N.—To provide for Beer Money allowed to Marines on Shore - - - £. 10,200 Excess Cost of Bread and Meat beyond the $4\frac{1}{2}d.$ a day charged as the Fixed Price of the Compound Ration - - - - - 18,200	28,400	31,189
	1,370,176	1,350,460
Abate, Credits, viz.:—		
O.—Estimated Amount of Charges against Officers for use of Mess Traps - - - - -	£. 6,500	£. 7,600
Estimated Amount of Charges against Wages of Seamen, &c. for Issues of Seamen's Clothing, Soap, and Tobacco, and of Credits for Supplies to other Departments of Government, &c. - - - - -	176,590	181,771
Estimated Amount of Charges against Wages of Marines for Issues of Marine Clothing, &c. - - -	5,861	5,425
For Repayment by Indian Government for Seventwelfths of the Cost of Victualling the Seamen who are to be discharged from the Indian Troop Ships, and to be borne in the Imperial Reserves during the Non-trooping Season - - - - -	2,615	2,297
£.	191,566	197,093
	191,566	197,093
£.	1,178,610	1,153,367

## A B S T R A C T.

	£.	£.
PROVISIONS, &c., for the Fleet, Coast Guard Service, &c. - - - - -	997,034	991,140
CLOTHING, &c., for the Fleet, Coast Guard Service, &c. - - - - -	344,742	328,131
Beer Money, and Excess Cost of Rations for Marines on Shore - - - - -	28,400	31,189
Abate,—	1,370,176	1,350,460
Estimated Amount of charges against Officers, &c. for Issues, as above - -	191,566	197,093
TOTAL VOTE - - - - £.	1,178,610	1,153,367

VOTE 3.

ADMIRALTY OFFICE.

I. ESTIMATE of the Sum which will be required in the Year ending 31st March 1878, to defray the EXPENSES of the ADMIRALTY OFFICE.

One Hundred and Ninety-three Thousand Eight Hundred and Ninety Pounds.

II. SUB-HEADS under which this Vote will be accounted for.

	1877-78.	1876-77.	INCREASE.	DECREASE.	
	£.	£.	£.	£.	
A.—SALARIES, WAGES, AND ALLOWANCES, ADMIRALTY OFFICE -	178,000	174,120	3,880	—	
B.—RENTS, WATER, &c. - - - - - DITTO - -	6,390	6,500	—	110	
C.—FUEL, GAS, &c. - - - - - DITTO - -	2,500	2,200	300	—	
D.—TRAVELLING EXPENSES - - - - - DITTO - -	4,000	4,000	—	—	
E.—CARRIAGE OF SHIPS' BOOKS, ACCOUNTS, &c., AND CONTIN- GENCIES, ADMIRALTY OFFICE - - - - -	3,000	3,000	—	—	Actual Expenditure in 1875-76.
£.	193,890	189,820	4,180	110	£. 187,809

NET INCREASE - - - £: 4,070.

III. DETAILS of the above.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
	£.	£.
Salaries of the Lords Commissioners for executing the Office of Lord High Admiral of Great Britain and Ireland, viz.:		
First Lord (with a House) - - - - -	4,500	
First Naval Lord* (with a House) - - - - -	1,500	
Second Naval Lord* (inclusive of Allowance for Residence) - - - - -	1,200	
Junior Naval Lord* (- - ditto - - ditto - -) - - - - -	1,200	
Civil Lord - - - - -	1,000	
	9,400	9,400
Parliamentary Secretary - - - - -	2,000	2,000
Permanent Secretary (with a House) - - - - -	1,500	1,500
	£.	
Naval Secretary† - - - - -	1,500	
Allowance for Residence - - - - -	200	
	1,700	1,700
Private Secretary to the First Lord * - - - - -	500	500
Carried forward - - - £.	15,100	15,100

\* Also in receipt of Half-pay, provided for under Vote 15.  
† Also in receipt of a portion of Retired Pay, viz., 447 l., provided for under Vote No. 15.



## Vote 3.—ADMIRALTY OFFICE—continued.

		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
		£.	£.
Brought forward - - -		15,100	15,100
NAVAL DEPARTMENT.			
CLERKS, &c. ON THE ESTABLISHMENT: £.			
Chief Clerk, from 1,000 <i>l.</i> to 1,200 <i>l.</i> per annum - - - -	1,200		
6 Principal Clerks, from 700 <i>l.</i> to 1,000 <i>l.</i> per annum - - - -	5,438		
13 First Class Clerks, from 450 <i>l.</i> to 650 <i>l.</i> per annum - - - -	7,432		
14 Second Class Clerks, from 200 <i>l.</i> to 420 <i>l.</i> per annum - - - -	5,281		
		23,337	22,729
Librarian, from 150 <i>l.</i> to 300 <i>l.</i> per annum - - - -	280		
14 Clerks, Lower Division, from 80 <i>l.</i> to 200 <i>l.</i> per annum - - - -	2,659		
Duty Pay to some of the above - - - -	500		
Amount required for temporary employment of Civil Service Writers, &c. - - - -		547	
DEPARTMENT OF THE CONTROLLER OF THE NAVY.			
Controller of the Navy * - - - -	1,500	1,700	1,700
Allowance to ditto for House Rent - - - -	200		
Director of Naval Ordnance * - - - -		1,000	1,000
CONSTRUCTIVE AND ENGINEERING STAFF.			
Members of the Council of Construction.	Director of Naval Construction, from 1,000 <i>l.</i> to 1,200 <i>l.</i> per annum - - -	1,200	1,200
	Surveyor of Dockyards and Chief Constructor, from 900 <i>l.</i> to 1,000 <i>l.</i> per annum - - - -	1,000	1,000
	Engineer in Chief, from 700 <i>l.</i> to 900 <i>l.</i> per annum - - - -	900	900
	Two Chief Constructors, from 600 <i>l.</i> to 800 <i>l.</i> per annum - - - -	1,600	1,600
	Constructor and Professional Assistant to Surveyor of Dockyards, from 600 <i>l.</i> to 700 <i>l.</i> per annum - - - -	692	672
	Engineer Assistant to Surveyor of Dockyards, from 600 <i>l.</i> to 700 <i>l.</i> per annum - - -	700	700
Examiner of Contract Work - - - -		450	450
Chief Inspector of Machinery Afloat, borne on the Books of H.M.S. "Fisgard,"			
Full Pay - - - -	456	706	† 256
Civil Allowance to ditto - - - -	250		
Visiting Timber Inspector - - - -		600	600
Carried forward - - - £.		48,985	47,907

\* Also in receipt of Half-pay, provided for under Vote 15.

† In addition to Retired Pay of 450*l.*, provided for under Vote 15.

## Vote 3.—ADMIRALTY OFFICE—continued.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
	£.	£.
Brought forward - - -	48,985	47,907
DEPARTMENT OF THE CONTROLLER OF THE NAVY—continued.		
CONSTRUCTIVE AND ENGINEERING STAFF—continued.		
	£.	
Three Examiners of Dockyard Work { One from 450 l. to 500 l. per annum - 500 Two at 350 l. per annum - - - 700 }	1,200	1,195
Assistant Constructor and Chief Draughtsman, from 400 l. to 500 l. per annum - -	500	500
Two Assistant Engineer Inspectors, from 350 l. to 450 l. per annum - - -	700	—
Assistant Constructor, from 300 l. to 500 l. per annum - - -	357	—
	£.	
Draughtsmen { Four 2nd Class, from 300 l. to 400 l. per annum - - - 1,401 Nine 3rd ditto, from 180 l. to 300 l. „ - - - 1,580 }	2,981	3,415
Two Modellers, at 3 l. 6 s. a week each - - - - -	344	344
Director of Stores, from 800 l. to 1,000 l. per annum - - - - -	1,000	800
Two Examiners of Store Accounts, from 250 l. to 300 l. per annum - - - -	592	582
Gunner, R.N., for Examination of Gunners' Naval Stores, borne on the books of H. M. S. "Fisgard":		
Full Pay - - - - -	137	
Allowance in lieu of Provisions - - - - -	27	
Lodging Allowance - - - - -	46	
Extra Pay - - - - -	73	
	283	283
CLERICAL STAFF:		
	£.	
1 Superintending Clerk, from 700 l. to 800 l. per annum - - - - -	800	
8 Senior Clerks, from 400 l. to 600 l. per annum - - - - -	4,171	
13 Clerks, from 100 l. to 400 l. per annum - - - - -	3,368	
9 Writers, 80 l. to 160 l. per annum - - - - -	1,244	
	10,848	10,755
Amount required for temporary employment of Civil Service Writers, and for Salaries of Clerks provisionally employed in lieu of Writers - - - - -	1,265	
VICTUALLING BRANCH:		
Superintendent of Victualling - - - - -	850	850
CLERKS, &c. on the ESTABLISHMENT:		
	£.	
2 Senior Clerks, from 400 l. to 600 l. per annum - - - - -	1,020	
3 Clerks, from 100 l. to 400 l. per annum - - - - -	711	
2 Writers, 80 l. to 160 l. per annum - - - - -	282	
	2,361	2,551
Amount required for temporary employment of Civil Service Writers - -	348	
PURCHASE AND CONTRACT DEPARTMENT:		
Director of Navy Contracts - - - - -	1,200	1,200
CLERKS, &c. on the ESTABLISHMENT:		
	£.	
1 Superintending Clerk, at 650 l. per annum - - - - -	650	
3 Senior Clerks, from 400 l. to 600 l. per annum - - - - -	1,580	
8 Clerks, from 100 l. to 400 l. per annum - - - - -	1,988	
4 Writers, from 80 l. to 160 l. per annum, and 1 Mechanic Writer - -	569	
	5,180	4,985
Add,— Amount required for temporary employment of Civil Service Writers -	393	
Viewer of Coals in South Wales - - - Salary - - - - -	400	
Subsistence Allowance - - - - -	78	
	478	478
Custodian of Store Patterns - - - - -	200	290
Carried forward - - - - -	£.	
	78,059	76,045



## VOTE 3.—ADMIRALTY OFFICE—continued.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
	£.	£.
Brought forward - - -	78,059	76,045
<b>DEPARTMENT OF THE ACCOUNTANT GENERAL:</b>		
Accountant General of the Navy and Comptroller of Navy Pay - - - - -	1,300	1,300
Deputy Accountant General of the Navy - - - - -	1,000	1,000
Deputy Comptroller of Navy Pay - - - - -	1,000	1,000
<b>CLERKS, &amp;c., on the ESTABLISHMENT: *</b>		
5 Chief Clerks, at 850 l. per annum - - - - -	4,250	4,250
Inspector of Yard Accounts, from 650 l. to 750 l. per annum - - - - -	748	723
Superintendent of Greenwich Hospital Branch, from 400 l. to 650 l. per annum (provided under Greenwich Hospital Vote) - - - - -	—	—
Book-keeper, from 700 l. to 800 l. per annum - - - - -	775	750
	£.	
40 Senior Clerks, from 400 l. to 600 l. per annum - - - - -	21,988	
93 Clerks, from 100 l. to 400 l. per annum - - - - -	27,072	
57 Writers, from 80 l. to 160 l. per annum - - - - -	7,591	
6 Mechanic Writers, at 8 s. a day and Subsistence Allowance - - - - -	1,134	
	62,380	61,124
<i>Add,—</i> Amount required for Temporary Employment of Civil Service Writers, &c. - - - - -	5,325	
<i>Abate,—</i> Cost of the Clerical Staff of the Greenwich Hospital Branch (exclusive of the Superintendent) to be borne by the Funds of the Hospital, less reduction for work done on account of the Royal Naval College (120 l.) - - - - -	£. 63,110 730	
Allowance to Estimate Clerks - - - - -	100	100
A "Foreman of the Yard," employed in connexion with Manufacturing Accounts - - - - -	400	400
<b>DEPARTMENT OF THE DIRECTOR GENERAL:</b>		
Director General of the Medical Department of the Navy - - - - -	1,300	1,300
	£.	
Deputy Inspector General, R.N., borne on the books of H.M.S. "Fisgard," Full Pay - - - - -	693	
Allowance to ditto in lieu of a Servant - - - - -	18	
Allowance to ditto in lieu of Provisions - - - - -	27	
Allowance to ditto for Lodging - - - - -	109	
	847	847
<b>CLERKS, &amp;c., on the ESTABLISHMENT:</b>		
	£.	
2 Senior Clerks, from 400 l. to 600 l. per annum - - - - -	1,080	
5 Clerks, from 100 l. to 400 l. per annum - - - - -	1,480	
4 Writers, from 80 l. to 160 l. per annum - - - - -	565	
	3,203	3,082
<i>Add,—</i> Amount required for temporary employment of a Civil Service Writer - - - - -	78	
Carried forward - - - £.	155,362	151,921

\* Some of the Staff perform the extra duty of Assessing, &c. Income Tax. The future mode of remuneration (chargeable to Inland Revenue Funds) is still under consideration.

## VOTE 3.—ADMIRALTY OFFICE—continued.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
	£.	£.
Brought forward - - -	155,362	151,921
<b>DEPARTMENT OF THE DIRECTOR OF TRANSPORTS:</b>		
Director of Transports (in addition to Allowance specified below) - - - - -	1,200	1,200
Military Officer to assist the Director of Transports* - - - - -	365	365
CLERKS, &c., on the ESTABLISHMENT: £.		
1 Senior Clerk, from 400 £. to 600 £. per annum - - - - -	540	
2 Clerks, from 100 £. to 400 £. per annum - - - - -	599	
2 Writers, from 80 £. to 160 £. per annum - - - - -	268	
Add,—		
Amount required for the temporary employment of a Civil Service Writer - - - - -	78	
	1,485	
FOR INDIAN TROOP SERVICE:		
Allowance to Director of Transports, for the Control of the Indian Troop Service - - - - -	350	
Superintendent of the India Branch, at 800 £. per annum - - - - -	800	
2 Senior Clerks, from 400 £. to 600 £. per annum - - - - -	1,081	
5 Clerks, from 100 £. to 400 £. per annum - - - - -	1,229	
2 Writers, from 80 £. to 160 £. per annum - - - - -	272	
Temporary employment of Civil Service Writers - - - - -		
	234	
	5,451	
Abate,—		
Repayment to be made by India Government - - - - -	3,966	
<b>DEPARTMENT OF THE DIRECTOR OF WORKS:</b>		
Director of Engineering and Architectural Works - - - - -	1,300	1,300
Assistant Engineer and Chief Draughtsman, from 600 £. to 700 £. per annum - - - - -	700	700
Examiner of Accounts, Returns, &c., from 600 £. to 700 £. per annum - - - - -	700	700
Principal Clerk, from 400 £. to 600 £. per annum - - - - -	437	417
Assistant Architect, for Coast Guard Duties, from 500 £. to 600 £. per annum - - - - -	600	600
Inspector of Coast Guard Buildings, from 300 £. to 350 £. per annum - - - - -	350	350
£.		
Accountant Clerks { 1 from 100 £. to 400 £. per annum - - - - - 380 { 6 from 100 £. to 300 £. per annum - - - - - 1,490	1,870	1,795
Draughtsmen { 1 from 100 £. to 400 £. per annum - - - - - 355 { 5 from 100 £. to 300 £. per annum - - - - - 1,020	1,375	1,280
Clerks { 1 from 100 £. to 400 £. per annum - - - - - 280 { 3 from 100 £. to 300 £. per annum - - - - - 537	817	777
Carried forward - - - £.	166,561	162,831

\* Allowance in addition to Army Pay.



## VOTE 3.—ADMIRALTY OFFICE—continued.

		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
		£.	£.
Brought forward - - -		166,561	162,831
MESSENGERS, &c.			
Head Messenger and Office Keeper at Whitehall, from 200 l. to 250 l. per annum, and Allowance - - - - -	£.	265	
Hall Porter at Whitehall, from 130 l. to 150 l. per annum - - - - -		150	
Head Messenger for the other Buildings, at 150 l. per annum - - - - -		150	
15 First Class Messengers, from 100 l. to 120 l. per annum - - - - -		1,728	
37 Second Class Messengers, from 75 l. to 95 l. per annum - - - - -		3,249	
Add,—			
Amount required for temporary employment of Commissionnaires, Messengers, Labourers, Housekeeper's Servants, &c.; and for Allowances to Messengers in addition to Salary, not otherwise provided for - - -		4,734	
	£.	10,276	
Abate,—			
Repayment from Indian and Greenwich Hospital Funds, respectively, of the Wages of Messengers, &c. attached to the India and Greenwich Hospital Branches of the Admiralty - - - - -		279	
	£.	9,997	
Keeper of Forms - - - - -		210	
Printer (Pay and Allowance for Assistance); Turncock; and Contribution towards Pay of Binder and Gardener - - - - -		340	
Six Police Constables, at 81 l. 19 s. per annum - - - - -		492	
Housekeeper, Spring Gardens (no successor will be appointed) - - - - -		100	
Remuneration to Clerks, Draughtsmen, &c., for Extra Attendance or Special Service -		1,000	1,000
Abate,—	£.	178,700	174,820
Amount to be contributed out of the Funds of Greenwich Hospital, being a commuted Rate for the Work performed in the several Departments of the Admiralty in connexion with Greenwich Hospital business, exclusive of the Cost of the Greenwich Hospital Branch of the Accountant General's Office - - - - -		700	700
A.—SALARIES, WAGES, and ALLOWANCES, ADMIRALTY OFFICE - - - £.		178,000	174,120
B.—Rents, &c. (6,210 l.); Water (180 l.) - - - - -		6,390	6,500
C.—Fuel, Candles, Oil, &c. (1,500 l.), and Gas (1,000 l.) - - - - -		2,500	2,200
D.—Travelling Expenses, &c. of Officers of the Admiralty on the Public Service -		4,000	4,000
E.—Carriage of Ship's Books, Accounts, &c. and Contingencies, Admiralty Office -		3,000	3,000
TOTAL - - - £.		193,890	189,820

*Note.*—A Commander, R.N., a Lieutenant, R.N., and a Paymaster, R.N., are borne on Ship's Books for temporary service at the Admiralty, their Pay being charged to Vote No. 1. There is also a Paymaster on the Half Pay List, temporarily employed, who receives difference between Full and Half Pay, &c., chargeable to Vote No. 14.

## Vote 4.

### COAST GUARD SERVICE AND ROYAL NAVAL RESERVES, &c.

- I. ESTIMATE of the Sum which will be required in the Year ending 31st March, 1878, to defray the EXPENSES of the COAST GUARD SERVICE, ROYAL NAVAL RESERVE, and SEAMEN and MARINE PENSIONERS RESERVE, and ROYAL NAVAL ARTILLERY VOLUNTEERS.

Two Hundred and Seven Thousand Nine Hundred Pounds.

II. SUB-HEADS under which this Vote will be accounted for.

	1877-78.	1876-77.	INCREASE.	DECREASE.	
	£.	£.	£.	£.	
A.—SALARIES, WAGES, &c., ROYAL NAVAL RESERVES OFFICE -	3,939	4,117	—	178	
B.—RENTS, AND INSURANCE OF BUILDINGS, COAST GUARD ESTABLISHMENTS ON SHORE - - - - -	29,774	29,347	427	—	
C.—TRAVELLING EXPENSES, REMOVAL OF OFFICERS AND MEN AND THEIR FAMILIES, &c., COAST GUARD ESTABLISHMENTS ON SHORE - - - - -	12,636	11,268	1,368	—	
D.—FUEL AND LIGHT, COAST GUARD ESTABLISHMENTS ON SHORE - - - - -	4,347	4,314	33	—	
E.—CONTINGENCIES, COAST GUARD ESTABLISHMENTS ON SHORE	3,004	2,984	20	—	
F.—ROYAL NAVAL RESERVE; WAGES, ALLOWANCES, DRILL, &c.	151,700	156,200	—	4,500	
G.—SEAMEN AND MARINE PENSIONERS RESERVE - - - -	1,000	1,000	—	—	
H.—ROYAL NAVAL ARTILLERY VOLUNTEER FORCE - - - -	1,500	1,000	500	—	
£.	207,900	210,230	2,348	4,678	Actual Expenditure, in 1875-76. £. 185,603
NET DECREASE - - - £. 2,330.					

III. DETAILS of the above Charges.

ROYAL NAVAL RESERVES OFFICE:		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
* Admiral Superintendent:	£.	£.	£.
Full Pay as Rear Admiral	1,095	1,569	1,934
Table Money	274		
Allowance in lieu of House Rent	200		
* Secretary to Admiral Superintendent:	£.		
Full Pay	601	651	651
Allowance in lieu of House Rent	50		
Clerical Staff, viz.:	£.		
Senior Clerk, from 400 £. to 600 £. per annum	501	781	746
Clerk, from 100 £. to 400 £. per annum	202		
Civil Service Writer	78		
Lithographer, at 2 £. per week	104	104	104
Messenger, from 75 £. to 95 £. per annum	84	84	82
Rent of Office	300	300	300
Fuel and Lighting, Water, and Contingencies	50	50	50
Travelling Charges and Subsistence Allowances	400	400	250
A.—SALARIES, WAGES, &c., ROYAL NAVAL RESERVES OFFICE	£.	3,939	4,117

\* Borne on the books of Her Majesty's Ship "Penelope," at Harwich.



## VOTE 4.—COAST GUARD SERVICE AND ROYAL NAVAL RESERVES, &amp;c.—continued.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
<b>COAST GUARD SERVICE:</b>	£.	£.
Rents and Insurances of Buildings (Stations, Officers' Houses, and Boatmen's Cottages), and Lodging Allowances to Officers and Men unprovided with Quarters -}	29,724	29,297
Tithes, &c. - - - - -	50	50
B.—RENTS and INSURANCES &c. of BUILDINGS, COAST GUARD } ESTABLISHMENTS ON SHORE - - - - - } £.	29,774	29,347
Allowances to Inspecting Officers of Divisions on Visiting Duty - - - - -	10,560	8,596
Expenses of removing Officers and Men and their Families from one Station to another - - - - -	2,016	1,885
Allowances to Inspecting Officers of Divisions for the keep of Horses - - - - -	60	787
C.—TRAVELLING EXPENSES, REMOVAL of OFFICERS and MEN and } their FAMILIES, and ALLOWANCES for KEEP of HORSES - - } £.	12,636	11,268
D.—FUEL and LIGHT, COAST GUARD ESTABLISHMENTS on } SHORE - - - - - } £.	4,347	4,314
Stationary Allowances (including Coast Guard Tenders) - - - - -	855	878
Postage and other Contingent Expenses (including Coast Guard Tenders) - - - - -	2,149	2,106
E.—CONTINGENCIES, COAST GUARD ESTABLISHMENTS ON SHORE - £.	3,004	2,984
<b>TOTAL of the COAST GUARD SERVICE - - - £.</b>	<b>49,761</b>	<b>47,913</b>

NOTE.—In addition to the Amount provided in this Vote for the Coast Guard Service, amounting to - - - - -

£.  
49,761

The following Sums are likewise included in the undermentioned Votes of the Navy Estimates for Expenses on account of that Service, viz.:—

	Under Vote.	£.
Sea-pay to Officers and Crews borne on the Books of Her Majesty's Ships and Vessels to be employed in the Coast Guard Service on Shore and in Cruizers - - - - -	No. 1.	208,829
Victuals, &c. for ditto - - - - -	No. 2.	107,278
Naval Stores for use of Coast Guard Stations and Cruizers, and Repairs of Cruizers - - - - -	{ No. 6 and No. 10. }	20,000
New Works and Repairs of Buildings, &c. - - - - -	No. 11.	25,000
Medical Attendance, Medicines, &c. - - - - -	No. 12.	4,631
Allowances to Ministers of Religion - - - - -	No. 14.	657
Civil Pensions of Coast Guard Officers and Men - - - - -	No. 16.	50,216

416,611

TOTAL CHARGE for the COAST GUARD SERVICE - - - £. 466,372

**TOTAL Number of OFFICERS and MEN to be Employed in Her MAJESTY'S COAST GUARD SERVICE on Shore, whose Pay is provided for under Vote No. 1.**

	Number.
Inspecting Commanders - - - - -	36
Divisional Officers - - - - -	30
Paymasters - - - - -	11
Station Officers - - - - -	231
Chief Boatmen in Charge, Chief Boatmen, Commissioned Boatmen, Boatmen, and Divisional Carpenters - - - - -	3,970
Clerks to District Paymasters - - - - -	13
	4,300

VOTE 4.—COAST GUARD SERVICE AND ROYAL NAVAL RESERVES, &c.—continued.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
F.—ROYAL NAVAL RESERVE; WAGES, ALLOWANCES, DRILL, &c.:	£.	£.
Subsistence Allowances for Officers of the Royal Naval Reserve whilst under Drill (under Act 24 & 25 Vict. c. 129) - - - - -	1,000	1,000
Annual Retainer to Seamen of the Royal Naval Reserve - - - - -	90,100	93,000
Drill Pay and Lodging Allowance - - - - -	42,200	43,000
Capitation Allowance for Boys entered from Training Ships for Mercantile Marine -	500	1,500
Medical Fees for Examination of Men; Targets, Repair of Arms, Stationery Allow- ances, and Miscellaneous Expenses - - - - -	1,500	1,500
Travelling Expenses of Officers enrolling Men, and of Men to and from Drill - - -	2,800	3,100
Fees to Deputy Registrars of the Royal Naval Reserve for enrolling Men, &c., and for Clerks, Messengers, &c. - - - - -	4,500	4,500
Remuneration to Officers of the Coast Guard who are in charge of Batteries when Drilling Royal Naval Reserve Men - - - - -	2,000	1,500
Erection and Repair of Batteries for Drilling Men of the Royal Naval Reserve - -	7,000	7,000
Rent of Batteries, Carriage of Ammunition, &c. - - - - -	100	100
TOTAL for the ROYAL NAVAL RESERVE - - - £.	151,700	156,200
NOTE.—In addition to the Amount provided as above for the Royal Naval Reserve (20,000 in number), viz. - - - - -	£. 151,700	
The following Sums are likewise included in the undermentioned Votes of the Navy Estimates for Expenses on account thereof, viz.:—		
Sea-pay, &c. to Officers and Crews of Her Majesty's Ships "Castor," "Unicorn," "Trincomelee," "Dædalus," "Durham," "Eagle," "President," and "Clyde," used as Drill Ships for the Royal Naval Reserve - - - - -	Under Vote. £. No. 1. 25,321	
Victuals, &c. for ditto - - - - -	No. 2. 8,396	
Ditto for the Royal Naval Reserve when on Drill afloat - - - - -	No. 2. 47,834	
Naval Stores for and Repairs to the above Ships -	{ No. 6 and No. 10. } 1,800	
Medical Attendance, Medicines, &c., for Crews and Royal Naval Reserve Men - - - - -	No. 12. 1,836	
	85,187	
TOTAL CHARGE for the ROYAL NAVAL RESERVE - - - £.	236,887	
G.—SEAMEN AND MARINE PENSIONERS RESERVE:		
Wages, Travelling, and other Expenses - - - - -	1,000	1,000
NOTE.—A sum of 650 l. is taken under Vote No. 2, for the Victualling of the Seamen and Marine Pensioners when on drill afloat, and 33 l. under Vote 12, for Medical Attendance, &c. (provision being made for 400 in number).		
H.—ROYAL NAVAL ARTILLERY VOLUNTEER FORCE:		
For Pay, &c., of Instructors - - - - -	1,500	1,000
NOTE.—Provision is also included under the following Votes for Victuals, &c., Naval Stores, and Medicines, viz.: Vote 2, 150 l.; Vote 10—1, 50 l.; and Vote 12, 50 l., for the Volunteers when on drill afloat.		



## VOTE 5.

## SCIENTIFIC BRANCH.

I. ESTIMATE of the Sum which will be required in the Year ending 31st March 1878, to defray the EXPENSES of the SCIENTIFIC BRANCH.

One Hundred and Nine Thousand and Two Pounds.

II. SUB-HEADS under which this Vote will be accounted for.

	1877-78.	1876-77.	INCREASE.	DECREASE.	
	£.	£.	£.	£.	
A.—SALARIES, WAGES, AND ALLOWANCES, ROYAL OBSERVATORY	5,063	4,978	85	—	
B.—CONTINGENCIES - - - - - DITTO	2,171	2,298	—	127	
B.B.—EXPENSES IN CONNECTION WITH OBSERVATIONS OF THE TRANSIT OF VENUS IN 1874	1,500	1,000	500	—	
C.—OBSERVATORY AT THE CAPE OF GOOD HOPE	3,127	2,808	319	—	
D.—NAUTICAL ALMANAC	2,981	2,888	93	—	
E.—CHRONOMETERS	1,382	1,267	115	—	
F.—COMPASS DEPARTMENT	1,921	1,828	93	—	
G.—REWARDS, EXPERIMENTS, &c., FOR SCIENTIFIC PURPOSES	300	300	—	—	
H.—INSPECTION OF NAVAL, &c. SCHOOLS	1,072	1,072	—	—	
K.—ROYAL UNITED SERVICE INSTITUTION	300	300	—	—	
L.—LIBRARIES, &c., AT HASLAR AND PLYMOUTH HOSPITALS AND CHATHAM MARINE INFIRMARY	00	100	—	—	
M.—SALARIES, WAGES, AND ALLOWANCES, HYDROGRAPHICAL DEPARTMENT	8,722	8,644	78	—	
N.—DRAWING, ENGRAVING, PRINTING, AND MOUNTING CHARTS	11,000	11,000	—	—	
O.—CONTINGENCIES, HYDROGRAPHICAL DEPARTMENT	1,000	1,000	—	—	
P.—COAST AND OTHER SURVEYS	27,000	26,517	483	—	
Q.—ROYAL NAVAL COLLEGE, GREENWICH	36,377	38,051	—	1,674	
R.—CONDUCT OF EXAMINATIONS, ROYAL NAVAL COLLEGE, GREENWICH	1,488	1,488	—	—	
S.—NAVAL MUSEUM, GREENWICH	898	1,055	—	157	
T.—EXPENSES CONNECTED WITH CANDIDATES FOR THE NAVAL MEDICAL SERVICE	2,600	2,600	—	—	
£.	109,002	109,194	1,766	1,958	Actual Expenditure in 1875-76.
					£.
					107,262

NET DECREASE - - - £. 192.

NOTE.—The estimated amount of Extra Receipts relating to this Vote to be paid into the Exchequer for the Year 1877-78, is 6,200 £., included in the total sum of 217,000 £., shown in Prefatory Statement of these Estimates, page 3.

## VOTE 5.—SCIENTIFIC BRANCH—continued.

## III.

## DETAILS of the foregoing.

	REQUIRED for the Service of the Year 1877/78.	PAST VOTE for the Financial Year 1876/77.
<b>ROYAL OBSERVATORY:</b>		
	£.	£.
Astronomer Royal (Salary of Successor to be reconsidered)	1,200	1,200
Chief Assistant, from 500 <i>l.</i> to 600 <i>l.</i> per annum	600	600
Two First Class Assistants, from 320 <i>l.</i> to 450 <i>l.</i> per annum	794	764
Four Second Class Assistants, from 200 <i>l.</i> to 300 <i>l.</i> per annum	997	967
Supernumerary Computers	454	454
Wages of Labourer, Watchman, and Gate Porter	138	138
<b>Magnetic and Meteorological Branch:</b>		
Superintendent, from 320 <i>l.</i> to 450 <i>l.</i> per annum	440	425
Assistant, from 180 <i>l.</i> to 250 <i>l.</i> per annum	240	230
Supernumerary Computers	200	200
A.—SALARIES, WAGES, AND ALLOWANCES, ROYAL } OBSERVATORY - - - - - }	5,063	4,978
<b>Expenses of Board of Visitors</b>		
Fuel, Repairs, and other contingent Expenses	70	70
Galvanic Contingencies	1,250	1,200
Expenses of Signal Time Ball at Deal	160	100
Photographic Chemicals for Heliograph	85	85
	25	25
<b>Extraordinary Expenses:</b>		
Repairs to Observatory Buildings	100	92
New Micrometers, &c., to Attazimuth and Transit Circle	—	125
Micrometer for Photoheliograph	—	50
Calculations for Astronomer Royal's New Lunar Theory	160	160
Calculation of Star Catalogue	50	50
Doublet of Lenses for the Great Equatorial Telescope	15	—
Direct Vision Spectroscope	50	—
<b>Magnetic and Meteorological Branch:</b>		
Repairs of Instruments, New Instruments, and current Expenses of all kinds	250	250
Self-registering Instrument for Record of Atmospheric Electricity	—	75
Daily Telegrams to the Bulletin of the National Observatory at Paris	16	16
B.—CONTINGENCIES, ROYAL OBSERVATORY	2,171	2,298
£.	7,234	7,276
<b>For Special Pay to Superintendent, &amp;c., Wages of Computers, and other expenses in connection with the Observations of the Transit of Venus 1874</b>		
	1,500	1,000
B.B.—EXPENSES IN CONNECTION WITH OBSERVATIONS OF THE TRANSIT OF VENUS IN 1874 } £.	1,500	1,000



## VOTE 5.—SCIENTIFIC BRANCH—continued.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
C.—OBSERVATORY AT THE CAPE OF GOOD HOPE:		
Astronomer, from 600 <i>l.</i> to 700 <i>l.</i> per annum - - - - -	£. 690	£. 675
First Assistant, from 320 <i>l.</i> to 450 <i>l.</i> per annum - - - - -	360	350
Second Assistant, from 200 <i>l.</i> to 300 <i>l.</i> per annum - - - - -	300	300
Third Assistant, from 130 <i>l.</i> to 200 <i>l.</i> per annum - - - - -	138	170
Fourth Assistant, from 90 <i>l.</i> to 150 <i>l.</i> per annum (salary of successor to be reconsidered) - - - - -	144	134
Labourer - - - - -	80	80
Clerical Assistance in copying and computing the Meridian Work, &c. - - - - -	518	268
Incidental Expenses - - - - -	100	94
Attending to Simon's Bay Time Ball for Her Majesty's Ships - - - - -	37	37
Printing Astronomical Observations - - - - -	200	200
Apparatus and Chemicals for Photoheliograph and Spectroscope - - - - -	50	100
Repairs and Maintenance of Observatory Buildings - - - - -	450	400
Transit Circle Eye-piece - - - - -	60	—
£.	3,127	2,808
D.—NAUTICAL ALMANAC:		
Salary of the Superintendent - - - - -	550	550
Chief Assistant, from 250 <i>l.</i> to 350 <i>l.</i> per annum - - - - -	350	344
Four First Class Assistants, from 200 <i>l.</i> to 250 <i>l.</i> per annum - - - - -	969	939
Six Second Class Assistants, from 100 <i>l.</i> to 180 <i>l.</i> per annum - - - - -	912	855
Rent, &c. for the Office in Verulam Buildings - - - - -	100	100
For Sundries - - - - -	100	100
£.	2,981	2,888
Number of Nautical Almanacs sold in the Five Years ended the 31st December 1876; viz.:		
Year.	Number.	
1872 - - - - -	19,774	
1873 - - - - -	17,611	
1874 - - - - -	19,398	
1875 - - - - -	18,896	
1876 - - - - -	18,048	
E.—CHRONOMETERS:		
For the Purchase and Repairs of Chronometers, and Contingent Expenses incidental thereto - - - - -	1,200	1,085
* Superintendent of Chronometers at Portsmouth Observatory - - - - -	182	182
£.	1,382	1,267

\* Also in receipt of Reserved Half-pay.

## VOTE 5.—SCIENTIFIC BRANCH—continued.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
<b>F.—COMPASS DEPARTMENT:</b>		
	£.	£.
*Superintendent of Compasses :—Full Pay as Staff Commander, R.N. - - - - -	401	401
Civil Allowance to ditto - - - - -	182	182
Allowances to ditto in lieu of provisions and for lodgings - - - - -	109	109
Assistant to Superintendent of Compasses - - - - -	125	125
Compensation to ditto for payment of House Duty on Official Residence - - - - -	2	2
*Staff Commander, R.N., engaged on Compass Duties, Full Pay - - - - -	310	292
Surveying Pay and Lodging Allowance to ditto - - - - -	210	210
Allowance in lieu of Provisions to ditto - - - - -	27	27
Contingent Expenses - - - - -	30	30
Purchase and Repair of Standard Compasses - - - - -	375	300
Travelling Expenses in connection with the adjustment of Compasses of Her Majesty's Ships - - - - -	150	150
£.	1,921	1,828
<b>G.—REWARDS, EXPERIMENTS, &amp;c.:</b>		
Rewards, Experiments, and other Expenses for Scientific Purposes - - - - £.	300	300
(For Return of Expenditure of 1875-76, see Appendix, No. 8, p. 178).		
<b>H.—INSPECTION OF NAVAL, &amp;c. SCHOOLS:</b>		
*Inspector of Naval Schools, Full Pay as Chaplain, R.N. - - - - £. 475		
Civil Allowance - - - - - 225	700	700
Sub-inspector of Schools at Marine Divisions, Salary - - - - £. 183		
Allowance to ditto for Lodgings and Servant - - - - - 59	242	242
Travelling Expenses - - - - -	130	130
£.	1,072	1,072
<b>K.—ROYAL UNITED SERVICE INSTITUTION:</b>		
Annual Contribution towards the Funds of the above Institution - - - - £.	300	300
<b>L.—LIBRARIES, &amp;c., AT HASLAR AND PLYMOUTH HOSPITALS AND CHATHAM MARINE INFIRMARY:</b>		
Books and Specimens for the Library and Museum at Haslar, and books for the Libraries at Plymouth Hospital and Chatham Marine Infirmary - - - - £.	100	100

\* Borne on the books of Her Majesty's Ship "Fisgard." (See App. No. 1, Explanatory Statement A. 1, p. 162.)



## VOTE 5.—SCIENTIFIC BRANCH—continued.

				REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.																								
HYDROGRAPHICAL DEPARTMENT:				£.	£.																								
Hydrographer * - - - - -				1,000	1,000																								
Chief Naval Assistant* - - - - -				450	450																								
Naval Assistants on Salary - - - - -				—	1,150																								
+ Eight Naval Assistants borne on Ship's Books { 1 Lieutenant - 4 Staff Commanders 1 Navigating Lieu- tenant - 2 Paymasters - }				Full-pay - 2,510	2,026																								
Civil Allowances to one of the above to make up total Pay, &c. to 600 <i>l.</i> , to three of the above to make up 550 <i>l.</i> , to one to make up 500 <i>l.</i> , and to the three others to make up 450 <i>l.</i> a year - - - - -				1,590	924																								
Civil Assistant for Pilotage Duties, from 315 <i>l.</i> to 500 <i>l.</i> a year - - - - -				473	458																								
Temporary Assistants preparing Sailing Directions - - - - -				365	365																								
Superintendent of Charts * - - - - -				400	400																								
Draughtsmen at Salaries varying according to Rank and Length of Service, viz. :																													
<table><tr><th colspan="3">NUMBER.</th></tr><tr><th>1877/78.</th><th>1876/77.</th><th></th></tr><tr><td>Chief Draughtsman</td><td>1</td><td>1</td></tr><tr><td>1st Class - - -</td><td>1</td><td>1</td></tr><tr><td>2nd „ - - -</td><td>2</td><td>2</td></tr><tr><td>3rd „ - - -</td><td>2</td><td>2</td></tr><tr><td></td><td>6</td><td>6</td></tr><tr><td>Salaries - £.</td><td>1,561</td><td>1,507</td></tr></table>						NUMBER.			1877/78.	1876/77.		Chief Draughtsman	1	1	1st Class - - -	1	1	2nd „ - - -	2	2	3rd „ - - -	2	2		6	6	Salaries - £.	1,561	1,507
NUMBER.																													
1877/78.	1876/77.																												
Chief Draughtsman	1	1																											
1st Class - - -	1	1																											
2nd „ - - -	2	2																											
3rd „ - - -	2	2																											
	6	6																											
Salaries - £.	1,561	1,507																											
Messengers and Packers of Charts :				£.																									
One 1st Class, from 100 <i>l.</i> to 120 <i>l.</i> per annum - - - - -				114																									
Three others, from 75 <i>l.</i> to 95 <i>l.</i> per annum - - - - -				259																									
				373	364																								
M.—SALARIES, WAGES, AND ALLOWANCES, HYDROGRAPHICAL DEPARTMENT -				8,722	8,644																								
				£.																									
N.—{ Drawing and Engraving Charts - - - - -				6,000	11,000																								
{ Printing and Mounting Charts - - - - -				5,000																									
O.—Instruments, Repairs, Chart Boxes, &c., Books, and Contingencies - £.				1,000	1,000																								
Number of Charts Sold in the Five Years ended the 31st December 1876, and Proceeds of the same, viz. :																													
<table><tr><th>Year.</th><th>Charts. No.</th><th>Amount Received and Paid over to Exchequer.</th></tr><tr><td></td><td></td><td>£. s. d.</td></tr><tr><td>1872 - - - - -</td><td>89,711</td><td>5,050 18 1</td></tr><tr><td>1873 - - - - -</td><td>104,015</td><td>5,545 2 1</td></tr><tr><td>1874 - - - - -</td><td>120,936</td><td>6,586 13 5</td></tr><tr><td>1875 - - - - -</td><td>102,239</td><td>5,806 17 9</td></tr><tr><td>1876 - - - - -</td><td>99,980</td><td>5,637 16 2</td></tr></table>						Year.	Charts. No.	Amount Received and Paid over to Exchequer.			£. s. d.	1872 - - - - -	89,711	5,050 18 1	1873 - - - - -	104,015	5,545 2 1	1874 - - - - -	120,936	6,586 13 5	1875 - - - - -	102,239	5,806 17 9	1876 - - - - -	99,980	5,637 16 2			
Year.	Charts. No.	Amount Received and Paid over to Exchequer.																											
		£. s. d.																											
1872 - - - - -	89,711	5,050 18 1																											
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1875 - - - - -	102,239	5,806 17 9																											
1876 - - - - -	99,980	5,637 16 2																											
Carried forward - - - - - £.				20,722	20,644																								

\* Also in receipt of Half or Retired Pay. † Borne on the Books of H.M.S. "Fisgard." (See App. No. 1. Explanatory Statement, A. 1, p. 162.)

VOTE 5.—SCIENTIFIC BRANCH—*continued.*

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
<b>HYDROGRAPHICAL DEPARTMENT—<i>continued.</i></b>	<b>£.</b>	<b>£.</b>
Brought forward - - -	20,722	20,644
£.		
Hire of Vessels and Boats, Lodging Money, and other Expenses relating to Coast and other Surveys including Pay- ments by Officers for purchase and con- veyance of Charts, Instruments, &c. - -	17,220	
Extra Pay to Surveyors and their Assist- ants on Home Stations - - - -	1,660	
Extra Pay to Surveyors and their Assist- ants on Foreign and Colonial Sta- tions - - - - -	8,120	
P.—COAST AND OTHER SURVEYS (Hire of } Ships, Extra Pay, &c.) - - - }	* 27,000	26,517
£.	47,722	47,161

A moiety of the charges for the Australian Surveys of South Australia and West Australia is defrayed by the Colonies; the remaining moiety is provided for under Naval Votes. For the Queensland Survey, 1,750 *l.* are contributed by the Admiralty, and the remainder by the Colony. The greater part of the cost of the Survey of Victoria (which is carried on in the colonial steamer "Victoria") being defrayed by that Colony, charges on account thereof, to the extent of 2,500 *l.* only, will be borne by Imperial Funds, and are provided for under this Vote and Vote No. 1.

*Note.*—In addition to the Amount provided, as above,\* under the Hydrographical Department as the Estimated Expense of Surveys, amounting to - - -

£.  
27,000

The following Sums are likewise included in the undermentioned Votes of the Navy Estimates for Expenses of the Surveying Service, viz.:—

	Under Vote.	£.	
Sea Pay to the Officers and Crews of Her Majesty's Ships and Vessels employed in the Surveying Ser- vice; also the Pay of those employed in hired Vessels and Boats, but borne on the Books of Her Majesty's Ships, viz.:—			
Seamen, &c. - - - - - £. 30,505			
Marines - - - - - 1,014			
	No. 1	31,520	
Victuals, &c. for ditto - - - - -	No. 2	8,558	
Stores, Machinery, and Coals supplied to Surveying Ships and Vessels, and also Repairs - - - }	No. 6 & No. 10	14,592	
Medicines, &c. supplied to ditto - - - -	No. 12	100	
Pilotage of ditto - - - - -	No. 14	30	
			54,800
TOTAL Charge for the Surveying Service - - - £.			81,800

*N.B.*—For Statement of the Rates of Surveying Pay and Lodging Money of Surveying Officers of each Rank, see APPENDIX, No. 9, page 178; and Note respecting Surveys in Progress, see APPENDIX, No. 10, page 178.



## VOTE 5.—SCIENTIFIC BRANCH—continued.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
	£.	£.
Q.—ROYAL NAVAL COLLEGE, GREENWICH:		
*President (in addition to Half Pay) - - - - -	1,600	1,600
*Assistant to ditto (in addition to Half Pay) - - - - -	485	522
*Director of Studies - - - - -	1,200	1,200
Two Professors of Mathematics - - - - -	1,200	1,200
Professor of Physics - - - - -	600	600
Professor of Chemistry - - - - -	600	600
Professor of Applied Mechanics - - - - -	600	600
*Professor of Fortification (Captain, R.M.A.) - - - - -	450	450
*Assistant to ditto (Captain, R.M.A.) - - - - -	—	350
Mathematical and Naval Instructor and Lecturer in Meteorology† - - - - -	648	598
Three Instructors in Nautical Astronomy and Navigation† - - - - -	1,672	1,654
Three Instructors in Mathematics - - - - -	750	750
Instructor in Nautical Surveying† - - - - -	584	566
Instructor in Steam† - - - - -	339	548
Instructor in Applied Mechanics† - - - - -	314	314
Assistant to Professor of Physics† - - - - -	284	284
Demonstrator in Chemistry - - - - -	175	175
Demonstrator in Physics - - - - -	175	175
Instructor in Naval Architecture - - - - -	200	200
Instructor in Ship-building - - - - -	147	147
Instructor in Marine Engineering - - - - -	147	147
Instructor in Marine Engine Drawing - - - - -	126	126
Instructor in Freehand Drawing - - - - -	252	252
Two Instructors in French, 1 at 250 £. per annum, 1 at 200 £. per annum - - - - -	450	450
Instructor in German - - - - -	117	117
Instructor in Spanish - - - - -	105	105
Special Lectures on various subjects - - - - -	210	210
†Allowance to Medical Officer of Greenwich Hospital School - - - - -	80	80
Allowance to Civilian Medical Practitioner - - - - -	30	30
Allowance to Librarian - - - - -	50	50
Purchase of Books from the Library of Greenwich Hospital - - - - -	276	—
Scholarships to Competitors in the higher branches of Study - - - - -	590	632
Prizes to Students of Marine Engineering and Naval Architecture - - - - -	25	25
Full Pay and Allowances of Officers and Men serving in "Arrow" Gunboat, &c., and borne on the books of Her Majesty's Ship "Fisgard" - - - - -	979	952
Storekeeper and Cashier - - - - - £. 450	450	500
Allowance for House Rent - - - - -	—	—
Clerks:		
2 Senior, from 400 £. to 600 £. per annum - - - - - 972	1,277	1,222
1 Clerk, from 100 £. to 400 £. " - - - - - 305		
Clerk of Works - { Moiety of Salary † - - - - - 150	25	25
{ Moiety of Annual value of Residence - - - - - 25		
Carried forward - - - - - £.	17,362	17,606

\* Also in occupation of an Official Residence.

† Naval Officers, borne on the books of Her Majesty's Ship "Fisgard," and receiving Full Pay and Allowances, R.N., and in some cases special allowances for service at the College. (See Appendix, No. 1, Explanatory Statement, A. 1, p. 162.)

‡ The remaining portion of the Salaries or Wages provided under the Greenwich Hospital School Vote.

VOTE 5.—SCIENTIFIC BRANCH—*continued.*

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
Q.—ROYAL NAVAL COLLEGE, GREENWICH— <i>continued.</i>		
	£.	£.
Brought forward - - -	17,862	17,606
Writer - - - - -	157	152
† Wages of General and Mess Staff and extra Servants, Messengers, Stokers, &c., including Uniform for Porters, &c. - - - - -	4,377	4,477
* Allowance to Drill Serjeant, Greenwich Hospital School - - - - -	20	20
* Allowance to Gymnastic Instructor, Greenwich Hospital School - - - - -	20	20
Allowances in addition to Half-pay, R.N., &c., to Students not borne on Ships' Books -	2,218	2,877
Allowances towards Officers' Mess, at 1 s. 6 d. a day each - - - - -	1,495	1,740
Provision Allowance to Servants - ditto - - - - -	2,820	3,011
Wages of Police - - - - -	1,500	1,500
Gas - - - - -	1,600	2,000
Water - - - - -	200	200
Contribution for use of the Gymnasium at Greenwich Hospital School - - - - -	40	40
Contribution towards Greenwich Hospital funds in acknowledgment of the Loan of the Buildings occupied by the Naval College - - - - -	100	100
Rent of Ground (Greenwich Hospital Property) used for Instruction in Fortification -	6	—
Fuel, Furniture, and Stores - - - - -	2,945	2,892
Apparatus for illustration of Lectures - - - - -	450	500
Keeping in order Lawns and Terraces, and Sweeping Pavements - - - - -	300	300
Washing Mess Linen, &c., Travelling Expenses, Moiety of Expense of Cleaning Chapel and keeping up Cemetery, and other Contingencies - - - - -	767	616
£.	36,377	38,051
R.—CONDUCT OF EXAMINATIONS, ROYAL NAVAL COLLEGE, GREENWICH :		
Full Pay and Allowances of a Naval Instructor, borne on the books of Her Majesty's Ship "Fisgard" - - - - -	388	388
Fees to Examiners, and Travelling Expenses - - - - -	1,100	1,100
£.	1,488	1,488
S.—NAVAL MUSEUM, GREENWICH :		
Curator of Naval Models - - - - -	100	100
Wages of Modellers, Painter, Rigger, and Attendants, including Uniform for Attendants	552	518
Stores for ditto - - - - -	50	60
Glass cases and fittings - - - - -	100	250
Cleaning and Warming the Museum - - - - -	96	127
£.	898	1,055
T.—EXPENSES CONNECTED WITH CANDIDATES FOR THE NAVAL MEDICAL SERVICE		
Examination of Candidates - - - - -	415	415
Instruction at Army Medical School, Netley - - - - -	§2,185	§2,185
£.	2,600	2,600

\* The remaining portion of the Salaries or Wages provided under the Greenwich Hospital School Vote.

† Sea pay of a Domestic, 2nd Class, included, borne on the books of Her Majesty's Ship "Fisgard."

‡ Also in receipt of a Naval Pension.

§ Including Full Pay and Allowances of Naval Assistant Professor, borne on the books of Her Majesty's Ship "Duke of Wellington." (See Appendix, No. 1, Explanatory Statement, A. 1, p. 162.)

## VOTE 6.

## DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD.

I. ESTIMATE of the Sum which will be required in the Year ending 31st March 1878, to defray the Expenses of the DOCKYARDS and NAVAL YARDS at HOME and ABROAD.

One Million Three Hundred and Forty-one Thousand Six Hundred and Eighty Pounds.

II. SUB-HEADS under which this Vote will be accounted for.

	1877-78.	1876-77.	INCREASE.	DECREASE.	
	£.	£.	£.	£.	
A.—SALARIES AND ALLOWANCES, DOCKYARDS AT HOME -	109,975	105,734	4,241	—	
B.—RENTS, WATER, &c. - - - - - DITTO - -	3,911	3,694	217	—	
C.—GAS - - - - - DITTO - -	7,250	7,630	—	380	
D.—CONTINGENCIES - - - - - DITTO - -	4,360	4,300	60	—	
E.—WAGES TO ARTIFICERS, &c. - - - DITTO - -	1,014,829	*1,015,947	—	1,118	
F.—WAGES, &c., YARD SERVICE AFLOAT - DITTO - -	28,444	29,047	—	603	
G.—HIRE OF TEAMS - - - - - DITTO - -	10,284	8,824	1,460	—	
H.—WAGES, &c., POLICE FORCE - - - DITTO - -	31,486	28,181	3,305	—	
I.—EXTRA PAY TO ARTIFICERS, &c., OF THE FLEET DOCK- YARDS AT HOME - - - - -	250	300	—	50	
K.—SALARIES AND ALLOWANCES, NAVAL YARDS ABROAD	40,876	39,982	894	—	
L.—RENTS, RATES, WATER, &c. - - DITTO - -	761	741	—	40	
M.—GAS - - - - - DITTO - -	480	480	—	—	
N.—CONTINGENCIES - - - - - DITTO - -	1,110	1,030	80	—	
O.—WAGES TO ARTIFICERS, &c. - - DITTO - -	67,170	56,364	10,806	—	
P.—WAGES, &c., YARD SERVICE AFLOAT, DITTO - - -	7,278	7,229	49	—	
Q.—HIRE OF TEAMS - - - - - DITTO - -	723	773	—	50	
R.—WAGES, &c., POLICE FORCE - - DITTO - -	10,173	10,244	—	71	
S.—EXTRA PAY TO ARTIFICERS, &c. OF THE FLEET, NAVAL YARDS ABROAD - - - - -	2,380	3,250	—	870	Actual Expenditure in 1875-76.
£.	1,341,680	1,323,750	21,112	3,182	£. 1,356,869

NET INCREASE - - £. 17,930

The Amount required for 1877-78 includes 761 *l.*, transferred from other Votes; the real Increase is therefore 17,099 *l.*

\* Under revision, pending the transfer of 1,000 men from Hired List to Establishment.



VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

## III.

## DETAILS of the foregoing.

DOCKYARDS AT HOME.		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.										
DEPTFORD (STORE YARD):		£.	£.										
SALARIED ESTABLISHMENT:													
Foreman of Sailmakers, from 130 l. to 180 l. per annum	- - - - -	180	180										
Foreman of Storehouses	- - - - -	120	120										
Clerks :	£.												
*1 Senior Clerk, from 315 l. to 450 l. per annum	- - - - - 350	1,404	1,369										
2 Clerks, from 90 l. to 300 l. per annum	- - - - - 585												
1 Writer, from 80 l. to 160 l. per annum	- - - - - 138												
Add,—Amount required for Salary of a Clerk provisionally employed in lieu of a Writer, and for the temporary employment of a Civil Service Writer - - - - - 331													
Compensation to Officer occupying an Official Residence for payment of House Duty		2	2										
A.—SALARIES AND ALLOWANCES, DOCKYARDS AT HOME - - - - - £.		1,706	1,671										
Allowances in lieu of Stationery	- - - - -	14	14										
Postage, Travelling Charges on the Public Service, Advertisements, and other small Expenses	- - - - -	50	50										
D.—CONTINGENCIES, DOCKYARDS AT HOME - - - - - £.		64	64										
TOTAL SALARIED ESTABLISHMENT - - - - - £.		1,770	1,735										
W A G E S :													
STORE YARD:													
For the Wages of Shipwrights, other Artificers, and Labourers, viz. :													
	<table><tr><th colspan="2">Number of Men.</th></tr><tr><th>1877/78.</th><th>1876/77.</th></tr><tr><td>On the Establishment - - - - -</td><td>60 60</td></tr><tr><td>Hired Artificers and Labourers - - - - -</td><td>35 34</td></tr><tr><td>E.—TOTAL, WAGES TO ARTIFICERS, &amp;c., } DOCKYARDS AT HOME - - - - -</td><td>95 94</td></tr></table>	Number of Men.		1877/78.	1876/77.	On the Establishment - - - - -	60 60	Hired Artificers and Labourers - - - - -	35 34	E.—TOTAL, WAGES TO ARTIFICERS, &c., } DOCKYARDS AT HOME - - - - -	95 94		
Number of Men.													
1877/78.	1876/77.												
On the Establishment - - - - -	60 60												
Hired Artificers and Labourers - - - - -	35 34												
E.—TOTAL, WAGES TO ARTIFICERS, &c., } DOCKYARDS AT HOME - - - - -	95 94												
F.—For the Wages of persons employed for Yard Service afloat, borne on Yard books		70	70										
H.—For the Wages, &c. of the Metropolitan Police Force employed in the Storeyard, under Act 23 & 24 Vict. c. 185 (including commutation for Clothing, Fuel, and Contingent Expenses, for a Serjeant and Constables at 7 l. 9 s. 3 d. per man per annum, and for General Superintendence at 1 l. 2 s. 10 d. per man per annum):													
1 Serjeant - - - - -	£. 101												
2 Constables - - - - -	164												
3		265	265										
TOTAL WAGES - - - - - £.		5,690	5,561										
TOTAL DEPTFORD STOREYARD - - - - - £.		7,460	7,296										

\* Provision for the Salary of the late Inspector of Stores, that officer being employed in lieu of a Senior Clerk. He is provided with an Official Residence.

## VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—continued.

DOCKYARDS AT HOME—continued.		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
CHATHAM:		£.	£.
SALARIED ESTABLISHMENT:			
*Admiral Superintendent:			
Sea Pay and Allowances as a Rear Admiral, viz.:			
Sea Pay	£. 1,095		
Table Money	548		
Allowance in lieu of Provisions	27		
Allowance for Fuel and Lights	13		
		1,683	1,250
Allowance to Admiral Superintendent in lieu of Servants	- - - - -	200	125
Coxswain to Admiral Superintendent:			
Sea Pay	£. 51		
Allowance in lieu of Provisions, at 1 s. 6 d. a day	27		
		78	67
*Master Attendant		600	600
Master Rigger	- - - - -	220	220
Foreman of Spinning Machines (Successor to be Foreman of the Ropery, from 180 l. to 250 l. per annum)	- - - - -	250	250
Foreman of Sailmakers, from 130 l. to 180 l. per annum	- - - - -	130	180
Layer in the Ropeyard	- - - - -	125	125
*Chief Constructor, from 650 l. to 750 l. per annum	- - - - -	750	725
*Constructor, from 400 l. to 450 l. per annum	- - - - -	450	445
*Boatswain	- - - - -	220	220
Ditto - additional for service at New Basins, borne on the books of H.M.S. "Pembroke":			
Full Pay	£. 137		
Allowance for House Rent	35		
Allowance in lieu of Provisions	27		
Allowance for Service on Shore	18	217	217
Chief Gunner, R.N., borne on the books of H.M.S. "Pembroke:"			
Full Pay	£. 164		
Allowance in lieu of Provisions	27		
Allowance for Lodgings	46		
Allowance for Service on Shore	23	260	260
Master Smith (Acting) [Scale of Salary of the Office, 180 l. to 250 l. per annum]		180	180
Ten Foremen of the Yard			
1 at 300 l. per annum*			
1 at 250 l. per annum			
7 from 180 l. to 250 l. per annum			
1 Acting at 180 l. per annum			
Foreman of Joiners, from 150 l. to 200 l. per annum		180	200
Two Foremen of Smiths, from 130 l. to 150 l. per annum		294	284
Draughtsman, 1st Class, from 130 l. to 180 l. per annum		£. 130	
Allowance for Instruction of Apprentices in Drawing, after Yard Hours		20	
Draughtsman, 1st Class (Acting), for the Instruction in Dockyard of Car- penters, R.N.		150	150
		130	130
*Chief Engineer, from 500 l. to 600 l. per annum, borne on the books of H.M.S. "Pembroke"		600	593
*Assistant to ditto, from 300 l. to 400 l. per annum, borne on the books of H.M.S. "Pembroke"		340	330
*Conductor of Metal Mills		300	300
Foreman of Engineer Branch, from 180 l. to 250 l. per annum		206	196
Carried forward		£. 9,697	9,081

\* In occupation of an official Residence or Quarters.

VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS AT HOME— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
CHATHAM— <i>continued.</i>		£.	£.
Salaried Establishment— <i>continued.</i>			
Brought forward - - -		9,697	9,081
* Storekeeper, from 500 l. to 600 l. per annum - - - - -		500	—
Foreman of Storehouses - - - - -		120	120
* Cashier, from 550 l. to 600 l. per annum - - - - -		570	560
* Superintending Civil Engineer† - - - - -		700	700
Clerk of the Works, from 190 l. to 300 l. per annum - - - - -	£. 298	348	338
Allowance to ditto for House Rent - - - - -	50		
2 Draughtsmen, from 90 l. to 300 l. per annum - - - - -	360	1,115	1,068
2 Accountant Clerks, from 90 l. to 300 l. per annum - - - - -	495		
2 Writers, from 80 l. to 160 l. per annum - - - - -	260		
* Fleet Surgeon - - - - -	531	584	548
Allowance in lieu of Provisions, Servants, Fuel, and Light - - - - -	53		
* Surgeon, R.N. - - - - -	255	294	322
Allowance in lieu of Provisions, Servants, Fuel, and Light - - - - -	39		
Chaplain - - - - -	359	509	478
Civil Allowance to ditto - - - - -	150		
Head Master of the Dockyard School, for Instruction of Apprentices in the Yard, from 300 l. to 350 l. per annum - - - - -		315	335
Assistant Schoolmaster, from 120 l. to 180 l. per annum - - - - -		120	—
Clerks: - - - - -	£.		
3 Senior Clerks, from 315 l. to 450 l. per annum (one provided with a Residence) - - - - -	1,350	2,900	2,856
3 Clerks from 90 l. to 300 l. per annum - - - - -	840		
2 Writers, from 80 l. to 160 l. per annum - - - - -	298		
Add,—Amount required for temporary Employment of a Civil Service Writer, and for Salary of a Clerk provisionally employed in lieu of a Writer, &c. - - - - -	412		
ACCOUNTANT'S DEPARTMENT:			
* Accountant - - - - -		600	600
Clerks: - - - - -	£.		
‡ 2 Senior Clerks, from 315 l. to 450 l. per annum - - - - -	821	3,449	3,520
6 Clerks - from 90 l. to 300 l. „ - - - - -	1,800		
Add,—Amount required for temporary Employment of Civil Service Writers and Salaries of Clerks provisionally employed in lieu of Writers - - - - -	828		
Compensation to Officers occupying Official Residences for payment of House Duty -		28	28
A.—SALARIES AND ALLOWANCES, DOCKYARDS } AT HOME - - - - - }	Carried forward - - - - - £.	21,849	20,434

\* In occupation of an official Residence or Quarters.

† Also permitted to receive not more than two students in each year, at a fee of 40 l. each, from the Royal Indian Civil Engineering College at Cooper's Hill.

‡ Including provision for the Salary of the late Inspector of Stores, that Officer being employed in lieu of a Senior Clerk.



## VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—continued.

DOCKYARDS AT HOME—continued.				REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
CHATHAM—continued.					
Salaried Establishment—continued.				£.	£.
Brought forward - - -				21,849	20,434
Fitties - - - - -	-	-	-	15	14
Water supplied for Dockyard - - - - -	-	-	-	370	150
B.—Rents, Water, &c. - - - - -	-	-	-	385	164
C.—Lighting the Yard with Gas - - - - -	-	-	-	1,000	1,300
Allowances in lieu of Stationery - - - - -	-	-	-	152	152
Postage, Travelling Charges on the Public Service, Advertisements, Chapel Allowances, regulating Yard Clock, and other small Expenses - - - - -	-	-	-	625	650
D.—CONTINGENCIES, DOCKYARDS AT HOME - - - - -	-	-	-	777	802
TOTAL SALARIED ESTABLISHMENT - - - - -				24,011	22,700
WAGES :					
DOCKYARD :					
For the Wages of Shipwrights, other Artificers, and Labourers, viz. :					
				Number of Men.	
				1877/78.	1876/77.
On the Establishment - - - - -	-	-	-	1,478	*1,830
Hired Artificers and Labourers - - - - -	-	-	-	2,022	*2,170
TOTAL Established and Hired - - - - -				3,500	3,500
				113,163	106,975
				} *219,472	
				220,138	*219,472
For the Wages of Mechanic Writers in the Departments of the Professional Officers (in lieu of Clerks or Non-Professional Writers) - - -				£. 1,557	
For Salaries of Reduced Inspectors provisionally employed as Writers - - -				425	
				1,982	1,997
E.—TOTAL, WAGES TO ARTIFICERS, &c., DOCKYARDS AT HOME - - -				£. 222,120	221,469
For the Wages of Persons employed for Yard Service Afloat, in Steam Tugs, Hoys, &c., borne on Yard Books - - - - -				2,434	2,471
For the Cost of Victualling Crews, or allowances in lieu - - - - -				1,066	1,089
F.—WAGES, &c., YARD SERVICE AFLOAT, DOCKYARDS AT HOME - - -				£. 3,500	3,560
G.—For the Hire of Teams - - - - -				2,667	1,766
H.—For the Wages of the Metropolitan Police Force employed in the Dockyard, under Act 23 & 24 Vict. c. 135 (including commutation for Clothing, Fuel, and Contingent Expenses, at 9 l. 13 s. 3 d. for Inspectors, 7 l. 9 s. 3 d. for Serjeants and Constables, per man per annum, and for General Superintendence at 1 l. 2 s. 10 d. per man per annum) :					
1 Superintendent (proportion of pay) - - - - -	-	-	-	£. 326	
3 Inspectors - - - - -	-	-	-	516	
8 Serjeants - - - - -	-	-	-	805	
70 Constables - - - - -	-	-	-	5,737	
				7,384	7,396
TOTAL WAGES - - - - -				£. 235,671	234,191
TOTAL CHATHAM DOCKYARD - - - - -				£. 259,682	256,891

\* Under revision, pending the transfer of 148 men from the Hired List to the Establishment.

Vote 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS AT HOME— <i>continued.</i>	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
	£.	£.
<b>SHEERNESS:</b>		
<b>SALARIED ESTABLISHMENT:</b>		
*Captain Superintendent:		
Sea Pay and Allowances as a Captain of the 1st Class, viz.:		
Sea Pay - - - - -	£. 602	
Command Money - - - - -	91	
Allowance in lieu of Provisions - - - - -	27	
Allowance for Fuel and Lights - - - - -	13	
Civil Allowance - - - - -	267	
	1,000	1,000
Allowance to Captain Superintendent in lieu of Servants - - - - -	125	125
Coxswain to Captain Superintendent:		
Sea Pay - - - - -	£. 40	
Allowance in lieu of Provisions, at 1 s. 6 d. a day - - - - -	27	
	67	67
*Master Attendant and Harbour Master - - - - -	600	600
Master Rigger - - - - -	220	220
Foreman of Sailmakers, from 130 l. to 180 l. per annum - - - - -	151	141
*Chief Constructor, from 600 l. to 700 l. per annum - - - - -	700	675
*Constructor, from 400 l. to 450 l. per annum - - - - -	450	445
*Boatswain - - - - -	220	220
Master Smith, from 180 l. to 250 l. per annum - - - - -	250	250
Six Foremen { 2 at 250 l. per annum - - - - -	1,300	1,280
of the Yard { 3 from 180 l. to 250 l. per annum - - - - -		
{ 1 Acting, at 180 l. per annum - - - - -		
Foreman of Joiners, from 130 l. to 180 l. per annum - - - - -	135	170
Foreman of Caulkers, from 130 l. to 180 l. per annum - - - - -	159	149
Foreman of Smiths, from 130 l. to 150 l. per annum - - - - -	150	145
Draughtsman, 1st Class (Acting) [Scale of Salary of the Office, 130 l. to 180 l. per annum] - - - - -	£. 130	
Allowance for instructing Apprentices in Drawing after Yard hours - - - - -	20	
	150	150
*Chief Engineer, from 500 l. to 600 l. per annum, borne on the books of Her Majesty's Ship "Duncan" - - - - -	580	560
*Foreman of Engineer Branch, from 180 l. to 250 l. per annum - - - - -	250	240
Foreman of Boilermakers, from 180 l. to 250 l. per annum - - - - -	230	220
*Storekeeper and Cashier - - - - -	500	500
Per-centage to ditto on Payments of Wages - - - - -	13	15
Foreman of Storehouses - - - - -	120	120
*Clerk of Works, from 190 l. to 300 l. per annum - - - - -	300	300
Accountant Clerk, from 90 l. to 300 l. per annum - - - - -	200	192
Foreman of Works, from 120 l. to 180 l. per annum - - - - -	Transferred to Vote No. 11.	180
*Fleet Surgeon - - - - -	£. 547	
Allowance in lieu of Provisions, Servants, Fuel, and Light - - - - -	53	
	600	600
*Staff Surgeon, R.N., in lieu of a Surgeon - - - - -	£. 373	
Allowance in lieu of Provisions, Servants, Fuel, and Light - - - - -	53	
	426	418
*Chaplain:		
Full Pay - - - - -	£. 339	
Allowance to ditto as Naval Instructor - - - - -	110	
Civil Allowance to ditto - - - - -	51	
	500	500
Schoolmaster, for the Instruction of Apprentices in the Yard, from 200 l. to 280 l. per annum - - - - -	234	224
Assistant Schoolmaster from 120 l. to 180 l. per annum - - - - -	133	120
Carried forward - - - - -	£. 9,763	9,826

\* In occupation of an official Residence or Quarters.

Vote 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS AT HOME— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
SHEERNESS— <i>continued.</i>		£.	£.
Salaried Establishment— <i>continued.</i>			
Brought forward - - -		9,763	9,826
Clerks :	£.		
3 Senior Clerks, from 315 <i>l.</i> to 450 <i>l.</i> per annum - - - - -	1,319	4,556	4,339
(One provided with a Residence.)			
8 Clerks, from 90 <i>l.</i> to 300 <i>l.</i> per annum - - - - -	1,946		
6 Writers, from 80 <i>l.</i> to 160 <i>l.</i> per annum - - - - -	835		
Add,—Amount required for temporary employment of Civil Service Writers - - - - -	456		
ACCOUNTANT'S DEPARTMENT :			
*Accountant - - - - -		500	500
Clerks :	£.		
† 2 Senior Clerks, from 315 <i>l.</i> to 450 <i>l.</i> per annum - - - - -	755	2,151	2,172
3 Clerks, from 90 <i>l.</i> to 300 <i>l.</i> per annum - - - - -	697		
3 Writers, from 80 <i>l.</i> to 160 <i>l.</i> per annum - - - - -	425		
Add,—Amount required for temporary employment of Civil Service Writers - - - - -	274		
Compensation to Officers occupying Official Residences for payment of House Duty		15	18
A.—SALARIES AND ALLOWANCES, DOCKYARDS AT HOME - - - - £.		16,985	16,855
B.—Rents, &c. (tithes) - - - - - £.		1	1
C.—Lighting the Yard and Steam Factory with Gas - - - - £.		1,000	1,050
Allowances in lieu of Stationery - - - - -		145	145
Postage, Travelling Charges on the Public Service, Advertisements, Chapel Allowances, and other small Expenses - - - - -		400	400
D.—CONTINGENCIES, DOCKYARDS AT HOME - - - - £.		545	545
TOTAL SALARIED ESTABLISHMENT (carried forward) - - - £.		18,531	18,451

\* In occupation of an official Residence or Quarters.

† Including provision for the salary of the late Inspector of Stores, that officer being employed in lieu of a Senior Clerk.



VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS AT HOME— <i>continued.</i>			REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
SHEERNESS— <i>continued.</i>			£.	£.
Brought forward - - -			18,531	18,451
WAGES:				
DOCKYARD:				
For the Wages of Shipwrights, other Artificers, and Labourers, viz.:—				
	Number of Men.			
	1877-78.	1876-77.		
On the Establishment - - - - -	885	*740	68,667	*110,522
Hired Artificers and Labourers - - - - -	758	*904	42,178	
TOTAL Established and Hired - - -	1,643	1,644	110,845	*110,522
For the Wages of Mechanic Writers in the Departments of the Professional Officers (in lieu of Clerks or Non-Professional Writers) - - - £. 249			694	694
For Salaries of Reduced Inspectors visionally employed as Writers - - - - - 445				
E.—TOTAL WAGES TO ARTIFICERS, &c., DOCKYARDS } AT HOME - - - - - }		£.	111,539	111,216
For the Wages of Persons employed for Yard Service Afloat, in Steam Tugs, Hoys, &c.			3,692	3,703
For Cost of Victualling the above, or Allowances in lieu - - - - -			1,863	1,953
F.—WAGES, &c. YARD SERVICE AFLOAT, DOCKYARDS AT HOME - £.			5,555	5,656
G.—For the Hire of Teams - - - - -			1,459	1,459
H.—For the Wages of the Metropolitan Police Force employed in the Dockyard, under Act 23 & 24 Vict. c. 135 (including commutation for Clothing, Fuel, and Contingent Expenses, at 9 l. 13 s. 3 d. for Inspectors, 7 l. 9 s. 3 d. for Serjeants and Constables, per man per annum, and General Superintendence, at 1 l. 2 s. 10 d. per man per annum):—				
2 Inspectors - - - - -		£. 344		
4 Serjeants - - - - -		403		
25 Constables - - - - -		2,049		
31			2,796	2,804
TOTAL WAGES - - - £.			121,349	121,135
TOTAL SHEERNESS DOCKYARD - - - £.			139,880	139,586

\* Under revision, pending the transfer of 145 men from the Hired List to the Establishment.

## VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—continued.

DOCKYARDS AT HOME—continued.		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
PORTSMOUTH.			
SALARIED ESTABLISHMENT.			
*Admiral Superintendent:		£.	£.
Sea Pay and Allowances as a Rear Admiral, viz.:			
Sea Pay - - - - -	£. 1,095		
Table Money - - - - -	548		
Allowance in lieu of Provisions - - - - -	27		
Ditto for Fuel and Lights - - - - -	13		
		1,683	1,683
Allowance to Admiral Superintendent in lieu of Servants - - - - -		200.	200
Coxswain to Admiral Superintendent:			
Sea Pay - - - - -	£. 51		
Allowance in lieu of Provisions, at 1s. 6d. a day - - - - -	27		
		78	78
*Master Attendant and Harbour Master - - - - -		600	600
*Assistant to ditto - - - - -		500	500
Master Sailmaker (successor to be a Foreman of Sailmakers) - - - - -		—	200
*Master Rigger - - - - -		220	220
Foreman of Sailmakers, from 150 l. to 200 l. per annum - - - - -		196	—
*Chief Constructor, from 700 l. to 850 l. per annum - - - - -		800	775
*Two Constructors, from 400 l. to 450 l. per annum - - - - -		920	890
*Boatswain - - - - -		220	220
Master Smith, from 180 l. to 250 l. per annum - - - - -		220	210
Seventeen Foremen of the Yard { 5 at 250 l. per annum, including an allowance to one of 50 l. per annum for charge of Stores 5 from 180 l. to 250 l. per annum - - - - - 7 acting at 180 l. per annum (including 1 for India Troop Service) - - - - -		3,570	3,010
Foreman of Joiners, from 150 l. to 200 l. per annum - - - - -		190	180
Foreman of Caulkers, from 130 l. to 180 l. per annum - - - - -		180	180
Two Foremen of Smiths (one acting), from 130 l. to 150 l. per annum - - - - -		280	295
Draughtsman, 1st Class (acting) [salary of the office from 130 l. to 180 l. per annum] - - - - -	£. 130		
Allowance for instructing Apprentices in drawing, after yard hours - - - - -	20	150	150
Draughtsman, 1st Class (acting), for the instruction, in Dockyard, of Carpenters, R.N. - - - - -		130	130
*Chief Engineer, from 500 l. to 650 l. per annum, borne on the books of H.M.S. "Asia" - - - - -		580	560
*First Assistant to ditto, from 300 l. to 400 l. per annum - ditto - - - - -		396	368
Second Assistant to ditto, from 250 l. to 350 l. - - - - ditto - - - - -		270	260
Two Foremen of Engineer Branch (one acting), from 180 l. to 250 l. per annum - - - - -		430	250
Foreman of Boilermakers, from 180 l. to 250 l. per annum - - - - -		190	240
*Storekeeper, from 500 l. to 600 l. per annum - - - - -		500	—
Foreman of Storehouses - - - - -		120	120
*Cashier, from 550 l. to 600 l. per annum - - - - -		600	600
*Superintending Civil Engineer † - - - - -		700	700
*Two Clerks of Works, from 190 l. to 300 l. per annum - - - - -	£. 581		
Allowance to one of the above for House Rent - - - - -	50		
Draughtsman, from 90 l. to 300 l. per annum - - - - -	150		
Accountant Clerk, from 90 l. to 300 l. per annum - - - - -	170		
Two Foremen of Works, from 120 l. to 180 l. per annum - - - - -	350		
Allowance to one of the above whilst employed as Temporary Clerk of Works - - - - -	40	1,341	1,302
Carried forward - - - - -	£.	15,264	13,921

\* In occupation of an Official Residence or Quarters.

† Also permitted to receive not more than two students in each year, at a fee of 40 l. each, from the Royal Indian Civil Engineering College at Cooper's Hill.

VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS AT HOME— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
PORTSMOUTH— <i>continued.</i>			
Salaried Establishment— <i>continued.</i>		£.	£.
Brought forward - - -		15,264	13,921
*Fleet Surgeon - - - - -	£. 547	600	600
Allowance in lieu of Provisions, Servants, Fuel, and Light - - -	53		
*Assisting Staff Surgeon - - - - -	£. 401	454	454
Allowance in lieu of Provisions, Servants, Fuel, and Light - - -	53		
Chaplain - - - - - Full Pay	£. 361	511	550
Allowance to ditto as Naval Instructor - - - - -	-		
Civil Allowance to ditto - - - - -	150		
Admiralty Chemist, from 350 <i>l.</i> to 400 <i>l.</i> per annum - - - - -	-	395	380
Head Master of the Dockyard School, for the instruction of Apprentices in the Yard, from 300 <i>l.</i> to 400 <i>l.</i> per annum - - - - -	-	330	315
Assistant Schoolmaster, from 120 <i>l.</i> to 180 <i>l.</i> per annum - - - - -	-	140	130
Clerks:			
3 Senior Clerks, from 315 <i>l.</i> to 450 <i>l.</i> per annum - - - - -	£. 1,113	4,601	4,208
5 Clerks, from 90 <i>l.</i> to 300 <i>l.</i> per annum - - - - -	1,485		
(One provided with a residence.)			
4 Writers, from 80 <i>l.</i> to 160 <i>l.</i> per annum - - - - -	599		
Add,—Amount required for temporary employment of Writers and for Salaries of Clerks provisionally employed in lieu of Writers, &c. - - -	1,404		
ACCOUNTANT'S DEPARTMENT.			
*Accountant - - - - -	-	600	600
Clerks:			
† 2 Senior Clerks, from 315 <i>l.</i> to 450 <i>l.</i> per annum - - - - -	£. 821	5,120	5,074
10 Clerks, from 90 <i>l.</i> to 300 <i>l.</i> per annum - - - - -	2,716		
4 Writers, from 80 <i>l.</i> to 160 <i>l.</i> per annum - - - - -	579		
Add,—Amount required for temporary employment of Civil Service Writers - - - - -	1,004		
Compensation to Officers occupying Official Residences for payment of House Duty	-	22	22
A.—SALARIES and ALLOWANCES, DOCKYARDS AT HOME - - - - -	£.	28,037	26,254
Rents 20 <i>l.</i> , Tithes (44 <i>l.</i> ) - - - - -	-	64	67
Water supplied for Dockyard - - - - -	-	2,400	2,400
B.—RENTS, WATER, &c., DOCKYARDS AT HOME - - - - -	£.	2,464	2,467
Carried forward - - - - -	£.	30,501	28,721

\* In occupation of an Official Residence or Quarters.

† Including provision for the Salary of the late Inspector of Stores, that officer being employed in lieu of a Senior Clerk.



VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS AT HOME—continued.			REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
PORTSMOUTH—continued.			£.	£.
Salaried Establishment—continued.				
Brought forward - - -			30,501	28,721
C.—Lighting the Yard with Gas	-	-	2,700	2,500
Allowances in lieu of Stationery -	-	-	177	177
Postage, Travelling Charges on the Public Service, Advertisements, Chapel Allowances, Removal of Sullage, Allowance to Lightkeeper, and other small Expenses			1,000	1,000
D.—CONTINGENCIES, DOCKYARDS AT HOME	-	£.	1,177	1,177
TOTAL SALARIED ESTABLISHMENT - - - £.			34,378	32,398
W A G E S :				
DOCKYARD:				
For the Wages of Shipwrights, other Artificers and Labourers, viz. :—				
	Number of Men.			
	1877/78.	1876/77.		
On the Establishment	2,034	1,690*	162,586	} 324,199*
Hired Artificers and Labourers	2,876	3,220*	162,258	
TOTAL Established and Hired	4,910	4,910	324,844	324,199*
For the Wages of Mechanic Writers in the Departments of the Professional Officers (in lieu of Clerks or Non-professional Writers)			£.	
For Salaries of Reduced Inspectors provisionally employed as Writers			3,567	
			400	
			3,967	3,967
E.—TOTAL, WAGES TO ARTIFICERS, &c., DOCKYARDS AT HOME - £.			328,811	328,166
For the Wages of Persons employed for Yard Service Afloat, in Steam Tugs, Hoys, &c.			5,675	5,929
For the cost of Victualling the above, or Allowances in lieu -			2,808	2,985
F.—WAGES, &c., YARD SERVICE AFLOAT, DOCKYARDS AT HOME - £.			8,483	8,914
G.—For the Hire of Teams			2,660	2,660
H.—For Wages of the Metropolitan Police Force employed in the Dockyard, and Gun Boat Slips, Haslar, under Act 23 & 24 Vict. c. 135 (including Commutation for Clothing, Fuel, and Contingent Expenses at 9 <i>l.</i> 13 <i>s.</i> 3 <i>d.</i> for Inspectors, at 7 <i>l.</i> 9 <i>s.</i> 3 <i>d.</i> for Serjeants, and Constables, per man per annum, and for General Superintendence at 1 <i>l.</i> 2 <i>s.</i> 10 <i>d.</i> per man per annum :—				
			£.	
1 Superintendent (proportion of Pay)			378	
4 Inspectors			688	
14 Serjeants			1,409	
104 Constables			8,523	
			10,998	8,077
123				
TOTAL WAGES - - - £.			350,952	347,817
TOTAL PORTSMOUTH DOCKYARD - - - £.			385,330	380,215

\* Under revision, pending the transfer of 341 men from the hired list to the Establishment.

VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS AT HOME— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
DEVONPORT.		£.	£.
<b>*Admiral Superintendent:</b>			
Sea Pay and Allowances as a Rear Admiral, viz.:			
Sea Pay - - - - -	£. 1,095		
Table Money - - - - -	548		
Allowance in lieu of Provisions - - - - -	27		
Allowance for Fuel and Lights - - - - -	13		
		1,683	1,683
Allowance to Admiral Superintendent in lieu of Servants - - - - -		200	200
<b>Coxswain to Admiral Superintendent:</b>			
Sea Pay - - - - -	£. 51		
Allowance in lieu of Provisions, at 1s. 6d. a day - - - - -	27	78	78
<b>*Master Attendant - - - - -</b>		600	600
<b>*Assistant to ditto - - - - -</b>		500	500
<b>* Ditto - for Service at Keyham - - - - -</b>		500	500
Master Sailmaker (Successor to be a Foreman of Sailmakers) - - - - -		200	200
<b>*Master Rigger - - - - -</b>		220	220
Chief Boatswain borne on the books of Her Majesty's Ship "Indus," acting as Master Rigger at Keyham—Full Pay - - - - -	£. 164		
Allowance to ditto for House Rent - - - - -	35	244	244
Allowance to ditto in lieu of Provisions - - - - -	27		
Allowance to ditto for Service on Shore - - - - -	18		
Master Ropemaker (Successor to be a Foreman of the Ropery) - - - - -	£. 250	285	285
Allowance to ditto for House Rent - - - - -	35		
Foreman of Spinning Machines - - - - -		160	160
Layer in the Rope Yard - - - - -		100	100
<b>*Chief Constructor, from 700 l. to 850 l. per annum - - - - -</b>		750	725
<b>*Two Constructors, from 400 l. to 450 l. per annum - - - - -</b>		900	890
<b>*Boatswain - - - - -</b>		220	220
Ditto - for Service at Keyham - - - - -	£. 220	260	260
Allowance to ditto for House Rent - - - - -	40		
Master Smith, from 180 l. to 250 l. per annum - - - - -		250	250
Eleven Foremen of the Yard { 2 at 250 l. per annum - - - - -		2,240	1,850
{ 4 from 180 l. to 250 l. per annum - - - - -			
{ 5 acting, at 180 l. per annum - - - - -			
Foreman of Joiners, from 150 l. to 200 l. per annum - - - - -		200	200
Foreman of Caulkers, from 180 l. to 180 l. per annum - - - - -		180	170
Two Foremen of Smiths (one acting), from 180 l. to 150 l. per annum - - - - -		264	280
Draughtsman, first class (acting), from 180 l. to 180 l. per annum - - - - -	£. 180	150	169
Allowance to ditto for instructing Apprentices in drawing, after yard hours - - - - -	20		
Draughtsman, first class (acting), for the instruction, in the Dockyard, of Carpenters, R.N. - - - - -		130	130
Carried forward - - - - -	£.	10,314	9,914

\* In occupation of an Official Residence or Quarters.

VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS AT HOME— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1866/77.
DEVONPORT— <i>continued.</i>		£.	£.
Brought forward - - -		10,314	9,914
*Chief Engineer from 500 <i>l.</i> to 650 <i>l.</i> per annum - - - - -	£. 650	700	700
Special Allowance to ditto (not to be continued to Successor) - - -	50		
*First Assistant to ditto, from 300 <i>l.</i> to 400 <i>l.</i> per annum, borne on the books of H.M.S. "Indus" - - - - -	†£. 500	530	530
Special Allowance to ditto (not to be continued to Successor) - - -	30		
Second Assistant to ditto, from 250 <i>l.</i> to 350 <i>l.</i> per annum, borne on the books of H.M.S. "Indus" - - - - -	-	266	260
Two Foremen of Engineer Branch (one acting) from 180 <i>l.</i> to 250 <i>l.</i> per annum	-	430	250
Foreman of the Boilermakers, from 180 <i>l.</i> to 250 <i>l.</i> per annum - - -	-	230	220
*Storekeeper - - - - -	-	500	500
Two Foremen of Storehouses, at 120 <i>l.</i> each - - - - -	-	240	240
*Cashier† - - - - -	-	500	500
Per-centage to ditto on payments of Wages - - - - -	-	51	48
Clerk of the Works, from 190 <i>l.</i> to 300 <i>l.</i> per annum - - - - -	£. 300	700	680
Allowance to ditto for House Rent - - - - -	50		
Draughtsman, from 90 <i>l.</i> to 300 <i>l.</i> per annum - - - - -	140		
Accountant Clerk, from 90 <i>l.</i> to 300 <i>l.</i> per annum - - - - -	210		
*Fleet Surgeon - - - - -	£. 520	573	600
Allowance in lieu of Provisions, Servants, Fuel, and Light - - -	53		
*Surgeon, for service at Keyham - - - - -	£. 283	322	322
Allowance in lieu of Provisions, Servants, Fuel, and Light - - -	39		
*Staff Surgeon (in lieu of a Surgeon) - - - - -	£. 365	418	418
Allowance in lieu of Provisions, Servants, Fuel, and Light - - -	53		
Chaplain, Full Pay - - - - -	£. 368	550	550
Allowance to ditto as Naval Instructor - - - - -	55		
Civil Allowance to ditto - - - - -	127		
Head Master of the Dockyard School, for the Instruction of Apprentices in the Yard; from 300 <i>l.</i> to 400 <i>l.</i> per annum - - - - -	-	330	315
Assistant Schoolmaster, from 120 <i>l.</i> to 180 <i>l.</i> per annum - - - - -	-	172	162
Clerks:			
3 Senior Clerks, from 315 <i>l.</i> to 450 <i>l.</i> per annum - - - - -	£. 1,115		
(One provided with a residence.)			
18 Clerks, from 90 <i>l.</i> to 300 <i>l.</i> per annum - - - - -	4,695		
14 Writers, from 80 <i>l.</i> to 160 <i>l.</i> per annum - - - - -	1,925		
Add,—Amount required for temporary employment of Civil Service Writers, &c. - - - - -	383		
		8,118	8,331
Carried forward - - - - -	£.	24,914	24,540

\* In occupation of an Official Residence or Quarters.

† Special rate not to be continued to successor.

‡ Also in receipt of 100 *l.* per annum, part of Pension to make up former Salary as Storekeeper at Chatham.



VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS AT HOME— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
DEVONPORT— <i>continued.</i>		£.	£.
Brought forward - - -		24,944	24,540
ACCOUNTANT'S DEPARTMENT.			
*Accountant - - - - -		600	600
Clerks:	£.		
† 2 Senior Clerks, from 315 l. to 450 l. per annum - - -	821		
9 Clerks, from 90 l. to 300 l. per annum - - -	2,295		
7 Writers, from 80 l. to 160 l. per annum - - -	963		
Add,—Amount required for temporary employment of Civil Service Writers, &c. - - -	505	4,584	4,444
Compensation to Officers occupying Official Residences for payment of House Duty		20	22
A.—SALARIES and ALLOWANCES, DOCKYARDS AT HOME - - -	£.	30,148	29,606
Rent of Water for Dockyard and for Engineer Department at Keyham - - -		1,000	1,000
Rents, 15 l., Tithes, &c., 31 l. - - -		46	47
B.—RENTS, WATER, &c., DOCKYARDS AT HOME - - -	£.	1,046	1,047
C.—Lighting the Yard, Engineer Department at Keyham, &c. with Gas -		1,700	1,700
Allowances in lieu of Stationery - - -		161	161
Postage, Travelling Charges on the Public Service, Advertisements, Chapel Allow- ances, and other small Expenses - - -		800	750
D.—CONTINGENCIES, DOCKYARDS AT HOME - - -	£.	961	911
TOTAL SALARIED ESTABLISHMENT (carried forward) - - -	£.	33,855	33,264

\* In occupation of an Official Residence or Quarters.

† Including provision for the Salary of the late Inspector of Stores, that officer being employed in lieu of a Senior Clerk.

VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS AT HOME—continued.			REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
DEVONPORT—continued.			£.	£.
Brought forward - - -			33,855	33,264
WAGES:				
DOCKYARD:				
For the Wages of Shipwrights, and other Artificers and Labourers; viz.:—				
	Number of Men.			
	1877/78.	1876/77.		
On the Establishment - - - - -	1,873	* 1,560	145,240	} * 280,754
Hired Artificers and Labourers - - - - -	2,463	* 2,776	137,323	
TOTAL Established and Hired - - -	4,336	4,336	282,563	* 280,754
			£.	
For the Wages of Mechanic Writers in the Departments of the Professional Officers (in lieu of Clerks or non-Professional Writers)			500	} 750
For Salaries of Reduced Inspectors provisionally employed as Writers			250	
E.—TOTAL, WAGES TO ARTIFICERS, &c., DOCKYARDS AT HOME - - - £.			283,313	281,489
For the Wages of Persons employed for Yard Service Afloat, in Steam Tugs, Hoys, &c. - - - - -			6,759	6,684
For the Cost of Victualling the above, or Allowances in lieu - - - - -			3,189	3,217
F.—WAGES, &c., YARD SERVICE AFLOAT, DOCKYARDS AT HOME - - - £.			9,948	9,901
G.—For the Hire of Teams - - - - -			2,523	1,964
H.—For Wages of the Metropolitan Police Force employed in the Dockyard and Keyham Engineer Department, under Act 23 & 24 Vict. c. 135 (including Commutation for Clothing, Fuel, and Contingent Expenses at 9 l. 13 s. 3 d. for Inspectors, at 7 l. 9 s. 3 d. for Serjeants, and Constables per man per annum, and for General Superintendence, at 1 l. 2 s. 10 d. per man per annum), viz.:				
	£.			
1 Superintendent (proportion of pay) - - - - -	343			
4 Inspectors - - - - -	688			
8 Serjeants - - - - -	805			
67 Constables - - - - -	5,491			
			7,327	7,349
80				
TOTAL WAGES - - - £.			303,111	300,703
TOTAL DEVONPORT DOCKYARD - - - £.			336,966	333,967

\* Under revision, pending the transfer of 313 men from the hired list to the Establishment.

VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS AT HOME— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/76.
PEMBROKE:		£.	£.
*Captain Superintendent:			
Sea Pay and Allowances as Captain of the First Class, viz.:			
Sea Pay	£. 602		
Command Money	91		
Allowance in lieu of Provisions	27		
Ditto - for Fuel and Lights	13		
Civil Allowance	267	1,000	1,000
Allowance to Captain Superintendent in lieu of Servants	-	125	125
Coxswain to Captain Superintendent:			
Sea Pay	£. 40		
Allowance in lieu of Provisions, at 1 s. 6 d. a day	27	67	67
Master of Her Majesty's Ship "Nankin," doing duty as Queen's Harbour Master and Master Attendant (in addition to Full Pay)		50	50
*Chief Constructor, from 600 l. to 700 l. per annum		700	675
*Boatswain		220	220
Six Foremen of the Yard	{ 1 at 300 l. per annum 3 from 180 l. to 250 l. per annum 2 acting at 180 l. per annum	1,280	1,080
Foreman of Joiners, from 130 l. to 180 l. per annum		180	170
Two Foremen of Smiths (one acting) from 130 l. to 150 l. per annum		280	295
Allowance to Senior Foreman in charge of Smithery (not to be continued to successor)		50	30
Draughtsman, first class, from 130 l. to 180 l. per annum		£. 170	
Allowance for instructing Apprentices in drawing after Yard hours		20	
Foreman of Engineer Branch, from 180 l. to 250 l. per annum		220	210
*Storekeeper, Cashier, and Accountant		500	500
Per-centage to ditto on payments of Wages		13	12
Assistant Civil Engineer, from 315 l. to 500 l. per annum		£. 500	
Allowance to ditto for House Rent		75	
Draughtsman, from 90 l. to 300 l. per annum		300	300
*Fleet Surgeon		£. 539	
Allowance in lieu of Provisions, Servants, Fuel, and Light		53	
Chaplain, Full Pay		£. 322	
Allowance to ditto as Naval Instructor		-	
Civil Allowance to ditto		150	
Schoolmaster, for the Instruction of Apprentices in the Yard, from 200 l. to 280 l. per annum		280	280
Carried forward		7,094	6,893

\* In occupation of an Official Residence or Quarters.



## VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—continued.

DOCKYARDS AT HOME—continued.		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
PEMBROKE—continued.		£.	£.
Brought forward - - -		7,094	6,893
Clerks: - - -	£.		
2 Senior Clerks, from 315 l. to 450 l. per annum - - -	855	3,438	3,317
8 Clerks, from 90 l. to 300 l. per annum - - -	1,805		
5 Writers, from 80 l. to 160 l. per annum - - -	642		
Add,—			
Amount required for temporary employment of Civil Service Writers, &c. -	136		
Allowance to a Senior Clerk for House Rent - - -		50	50
Compensation to Officers occupying official residences for payment of House Duty -		4	5
A.—SALARIES and ALLOWANCES, DOCKYARDS AT HOME - - -	£.	10,586	10,265
B.—Rents, &c. (Tithes and Insurance) - - -		10	10
C.—Making Gas at the Government Works - - -		850	1,080
Allowances in lieu of Stationery - - -		94	94
Postage, Travelling Charges on the Public Service (including Expenses of Surgeon, R.N.), Advertisements, Chapel Allowances, and other small Expenses - - -		535	500
D.—CONTINGENCIES, DOCKYARDS AT HOME - - -	£.	629	594
TOTAL SALARIED ESTABLISHMENT - - -	£.	12,075	11,949
WAGES:			
DOCKYARD:			
For the Wages of Shipwrights, other Artificers and Labourers; viz.:—			
		Number of Men.	
		1877/78.	1876/77.
On the Establishment - - -	750	*700	* 97,017
Hired Artificers and Labourers - - -	860	*910	
TOTAL Established and Hired - - -	1,610	1,610	
E.—TOTAL WAGES TO ARTIFICERS, &c., DOCKYARDS AT HOME (Carried forward) -	£.	97,092	* 97,017

\* Under revision, pending the transfer of 50 men from the hired list to the Establishment.

VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—continued.

DOCKYARDS AT HOME—continued.		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
PEMBROKE—continued.		£.	£.
Brought forward - - -		12,075	11,949
Wages of Shipwrights, &c., Brought forward - - -		97,092	97,017
For the Wages of Persons employed for Yard Service Afloat, in Steam Tugs, Hoys, &c., borne on Yard books - - - - -		602	631
For Wages of one Seaman, keeper of "Hope," Yard Craft, borne on the books of H. M. S. "Nankin" (29 l.), and allowance for Fuel and Lights (1 l.) - -		30	30
For the Cost of Victualling Crews, or Allowances in lieu - - - - -		256	285
F.—TOTAL WAGES, &c., YARD SERVICE AFLOAT, DOCKYARDS AT HOME - £.		888	946
G.—For the Hire of Teams - - - - -		975	975
H.—For Wages of the Metropolitan Police Force employed in the Dockyard, under Act 23 & 24 Vict. c. 135 (including Commutation for Clothing, Fuel, and Contingent Expenses, at 9 l. 13 s. 3 d. for Inspectors, at 7 l. 9 s. 3 d. for Serjeants and Constables, per man per annum, and for General Superintendence, at 1 l. 2 s. 10 d. per man per annum), viz. :—			
		£.	
2 Inspectors - - - - -		346	
3 Serjeants - - - - -		392	
19 Constables - - - - -		1,562	
24		2,210	2,210
TOTAL WAGES - - - £.		101,165	101,148
TOTAL PEMBROKE DOCKYARD - - - £.		113,240	113,097
HAULBOWLINE:			
SALARIED ESTABLISHMENT - - - - -		{ (Provided for under Vote No. 7, Victual- ling Yards, &c.)	
WAGES:			
E.—For the Wages of Shipwrights, other Artificers and Labourers, viz. :—			
		Number of Men.	
		1877/78.	1876/77.
Hired Artificers and Labourers - - - - -		15	15
		759	759
For Wages of Watchman for the Extension Works - - - - -		—	80
H.—For the Wages of the Royal Irish Constabulary employed for the protection of the Dockyard and Extension Works - - - - -		506	—
TOTAL for HAULBOWLINE NAVAL YARD - - - £.		1,265	839

Note.—A carpenter is also employed in Haulbowline Yard, borne on the books of Her Majesty's Ship "Revenge," and paid Harbour Pay and Allowances. His extra pay of 2s. a day is included in the amount provided for Yard Wages. He is provided with a residence.

## VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—continued.

## DOCKYARDS AT HOME—continued.

## PORTLAND COALING AND WATERING DEPÔT:

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
	£.	£.
Assistant Engineer (Acting) borne on the books of H. M. S. "Boscawen," in charge of Depôt—Full Pay - - - - -	110	219
Civil Allowance to ditto - - - - -	36	
Allowance to ditto in lieu of Provisions - - - - -	27	
Allowance to ditto for Lodgings - - - - -	46	
Assistant Civil Engineer, from 315 <i>l.</i> to 500 <i>l.</i> per annum - - - - -	£. 395	430
Allowance to ditto for House Rent - - - - -	50	
	445	
A.—SALARIES and ALLOWANCES, DOCKYARDS at HOME - - - - -	£. 664	649
B.—RENTS, &c. (TITHE) - - - - -	5	5
Allowance in lieu of Stationery - - - - -	9	9
Postage, Travelling Charges in the Public Service, &c. - - - - -	198	198
D.—CONTINGENCIES, DOCKYARDS at HOME - - - - -	£. 207	207
TOTAL SALARIED ESTABLISHMENT - - - - -	£. 876	861
WAGES:		
E.—For the Wages of a hired Artificer - - - - -	73	{ Provided for under Vote No. 2.
TOTAL PORTLAND COALING, &c., DEPÔT - - - - -	£. 949	861

## DOCKYARDS ABROAD.\*

## GIBRALTAR:

Naval Officer in charge of Establishments, &c.:			
Sea Pay and Allowances as a Captain of the 1st Class, viz.:			
Sea Pay - - - - -	£. 602		
Command Money - - - - -	91		
Allowance in lieu of Provisions - - - - -	27		
Ditto - for Fuel and Lights - - - - -	32		
Civil Allowance - - - - -	107		
	859		
Allowance to - - ditto - - to provide Wages for two Servants - - - - -	73		
Allowance in lieu of Provisions for two Servants - - - - -	55		
	987		
TOTAL Pay and Allowances - - - - -	987		
Less One-third of 800 <i>l.</i> payable by the Colonial Government } whilst this Officer performs the duties of Captain of the Port	267		
	720		719
Chief Engineer, borne on books of Her Majesty's Ship "Express," Full Pay - - - - -	£. 219		
Allowance to ditto in lieu of Charge Money - - - - -	36	302	282
Allowance to ditto in lieu of Provisions - - - - -	27		
Allowance to ditto in lieu of a Servant - - - - -	20		
Assistant Civil Engineer (acting) from 250 <i>l.</i> to 350 <i>l.</i> per annum - - - - -	350		350
Two Clerks, from 90 <i>l.</i> to 300 <i>l.</i> per annum - - - - -	£. 515	565	545
Allowance to one of the above, to meet increased responsibility - - - - -	50		
Temporary Employment of Writers - - - - -	220		220
Allowance to a Writer for House Rent - - - - -	30		30
K.—SALARIES and ALLOWANCES, NAVAL YARDS ABROAD (carried forward) - £.	2,187		2,146

\* Note.—At Dockyards Abroad Salaried Officers and Clerks are generally in occupation of Official Residences or Quarters, or in receipt of Allowances in lieu.



VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS ABROAD— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
GIBRALTAR— <i>continued.</i>		£.	£.
Brought forward - - -		2,187	2,146
Water for Dockyard - - - - -		40	40
Sanitary Rate - - - - -		431	471
L.—Rents, Rates, Water, &c. Naval Yards Abroad - - - - -	£.	471	511
M.—Lighting the Yard with Gas - - - - -		120	120
Allowance in lieu of Stationery - - - - -		40	10
Postage and other small Expenses - - - - -		60	50
N.—CONTINGENCIES, NAVAL YARDS ABROAD - - - - -	£.	100	60
TOTAL SALARIED ESTABLISHMENT - - - - -		2,878	2,837
WAGES:			
For the Wages of Shipwrights, other Artificers and Labourers, viz.:—			
		NUMBERS.	
		1877/78.	1876/77.
On the Establishment - - - - -		*7	3
Hired Artificers and Labourers - - - - -		52	46
For the Wages of two Engine Room Artificers borne on the books of H.M.S. "Express," for Service in the Yard -		2	—
For Allowances in lieu of Provisions to the above, and Extra Pay under the Queen's Regulations - - - - -		—	—
O.—TOTAL, WAGES to ARTIFICERS, &c., NAVAL YARDS ABROAD - - - - -		61	49
P.—For Wages of Persons employed for Yard Service Afloat		6	6
R.—Wages, &c. of Police Force employed in the Yard -		7	5
TOTAL WAGES - - - - -		74	60
TOTAL GIBRALTAR NAVAL YARD - - - - -			
	£.	8,568	7,419
MALTA:			
SALARIED ESTABLISHMENT:			
Admiral Superintendent:			
Sea Pay and Allowances as a Rear Admiral, viz.:—			
Sea Pay - - - - -	£.	1,095	
Table Money - - - - -		730	
Allowance in lieu of Provisions - - - - -		27	
Allowance for Fuel and Lights - - - - -		13	
Civil Allowance - - - - -		65	
Flag Lieutenant to Admiral Superintendent:			
Sea Pay - - - - -	£.	183	
Allowance in lieu of Provisions - - - - -		27	
Wages of Servant to ditto - - - - -	£.	20	
Allowance to ditto in lieu of Provisions - - - - -		27	
		47	47
Carried forward - - - - -		2,187	2,187

\* Four lent from the Home Yards.

VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS ABROAD— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
MALTA— <i>continued.</i>		£.	£.
Salaried Establishment— <i>continued.</i>			
Brought forward - - -		2,187	2,187
Retinue of Admiral Superintendent :			
Coxswain and five Domestics - - - - -	£. 195		
Allowance in lieu of Provisions to ditto - six at 1 s. 6 d. a day each - - - - -	164	359	359
Master Attendant and Queen's Harbour Master - - - - -	- - -	500	500
Boatswain - - - - -	- - -	230	230
Chief Constructor, from 550 l. to 650 l. per annum - - - - -	£. 600		
Temporary Allowance to ditto for teaching Mathematics and Mechanics - - - - -	52	652	627
Foreman of Shipwrights (increase of Salary not to be continued to his successor) - - - - -	- - -	200	200
Foreman of Smiths - - - - -	- - -	160	160
Chief Engineer, from 500 l. to 550 l. per annum - - - - -	- - -	540	520
Foreman of Engineer Branch - - - - -	- - -	180	180
Naval and Victualling Storekeeper and Accountant - - - - -	- - -	600	600
Per-centage to ditto on Payments of Wages - - - - -	- - -	10	13
Staff Surgeon borne on the books of H.M.S. "Hibernia," Full Pay - - - - -	£. 401	428	{ Provided for under Votes Nos. 1 and 2.
Allowance to ditto in lieu of Provisions - - - - -	27		
Wages of Servant to ditto - - - - -	£. 24	51	- ditto.
Allowance in lieu of Provisions to ditto - - - - -	27		
Clerk of Works, from 250 l. to 350 l. per annum - - - - -	£. 350	390	390
Allowance to ditto for House Rent - - - - -	40		
Accountant Clerk, from 150 l. to 300 l. per annum - - - - -	£. 300	340	340
Allowance to ditto for House Rent - - - - -	40		
Foreman of Works, from 200 l. to 250 l. per annum - - - - -	£. 248	283	273
Allowance to ditto for House Rent - - - - -	35		
Chaplain * - - - - -	£. 256	356	393
Civil Allowance to ditto - - - - -	100		
Inspector of Police - - - - -	£. 180	188	188
Annual Allowance to ditto for Uniform - - - - -	8		
Naval Schoolmaster of the Dockyard Schools * - - - - -	£. 109	139	121
Allowance to ditto for House Rent - - - - -	30		
Clerks { One Senior, from 315 l. to 450 l. per annum - - - - -	£. 450	1,304	1,259
{ Four, † from 90 l. to 300 l. per annum - - - - -	- - -		
{ One Native Clerk - - - - -	854		
Allowance to Three Clerks for House Rent, at 30 l. per annum each - - - - -	- - -	110	90
Temporary employment of Writers † - - - - -	- - -	1,069	1,021
Allowance to One Writer for House Rent - - - - -	- - -	30	30
K.—SALARIES and ALLOWANCES, NAVAL YARDS ABROAD - - - - -	Carried forward - - - £.	10,306	9,681

\* Borne on the books of H.M.S. "Hibernia," for time only.

† Native Clerks and Writers will be appointed at revised rates of Pay as vacancies occur.

VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS ABROAD— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
MALTA— <i>continued.</i>			
Salaried Establishment— <i>continued.</i>		£.	£.
Brought forward - - -		10,306	9,681
M.—Lighting the Dockyard with Gas - - - - -		280	280
Allowances in lieu of Stationery - - - - -		110	110
Postage, Advertisements, Allowance to Chaplain in lieu of Boatmen, Travelling Expenses, Boat Hire to Surgeon, R.N., Chapel Allowances, and other small Contingencies - - - - -		130	130
N.—CONTINGENCIES, NAVAL YARDS ABROAD - - - - - £.		240	240
TOTAL SALARIED ESTABLISHMENT - - - £.		10,826	10,201
WAGES:			
For the Wages of Shipwrights, other Artificers and Labourers, viz.:			
	Number of Men.		
	1877/78.	1876/77.	
On the Establishment - - - - -	45	45	4,009
Hired Artificers and Labourers - - - - -	476	306	22,755
TOTAL Established and Hired - - -	521	351	26,764
For the Wages of Mechanic Writers in the Departments of the Professional Officers, in lieu of Clerks - - -	2	2	245
O.—TOTAL, WAGES TO ARTIFICERS, &c., NAVAL YARDS ABROAD - - - }	523	353	27,009
P.—For the Wages of Persons employed for Yard Service Afloat in Steam Tugs, Hoys, &c. - - - - -	23	23	1,572
R.—For the Wages, &c. of the Police Force employed in the Dockyard - - - - -	48	50	3,231
TOTAL WAGES - - -	594	426	31,812
TOTAL MALTA NAVAL YARD - - - £.		42,638	33,550



VOTE 3.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS ABROAD— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
<b>HALIFAX:</b>		£.	£.
<b>SALARIED ESTABLISHMENT:</b>			
Naval and Victualling Storekeeper and Accountant - - - - -		550	500
Chief Carpenter, R.N., borne on the books of H.M.S. "Pyramus," Sea Pay £. 169			
Allowance to ditto in lieu of Provisions - - - - - 27			
Extra Pay to ditto - - - - - 37			
		233	169
Boatswain, R.N., borne on the books of H.M.S. "Pyramus" Sea Pay - £. 151			
Allowance in lieu of Provisions to ditto - - - - - 27			
Extra Pay to ditto - - - - - 37			
		215	164
Sea Wages of two Warrant Officers' Servants for ditto, borne in "Pyramus"		40	40
Allowances in lieu of Provisions to Servants - - - - -		55	55
Two Clerks, from 90 l. to 300 l. per annum - - - - -		527	497
Allowance to ditto, to meet increased cost of living - - - - -		100	100
Temporary Employment of Writers - - - - -		196	243
K.—SALARIES and ALLOWANCES, NAVAL YARDS ABROAD - - - - - £.		1,916	1,896
L.—Supply of Water by Contract, and use of Apparatus, &c. for extinguishing Fire		180	180
M.—Lighting the Yard with Gas - - - - -		80	80
Allowance in lieu of Stationery to the Naval Storekeeper and Accountant - -		12	12
Postage, Travelling Charges on the Public Service, Advertisements, and other small Expenses - - - - -		60	50
N.—CONTINGENCIES, NAVAL YARDS ABROAD - - - - - £.		72	62
TOTAL SALARIED ESTABLISHMENT - - - £.		2,248	2,218
<b>WAGES:</b>			
For the Wages of Shipwrights, other Artificers, and Labourers, viz.:			
	Number of Men.		
	1877/78.	1876/77.	
On the Establishment - - - - -	14	14	1,140
Hired Artificers and Labourers - - - - -	24	23	1,531
TOTAL, ESTABLISHED and HIRED - - -	38	37	2,671
For the Wages of an Armourer, a Blacksmith, and a Plumber, borne on the books of H.M.S. "Bellerophon," for service in the Yard - - -	3	3	152
For Allowances in lieu of Provisions to the above, and for Extra Pay under Queen's Regulations - -	-	-	142
O.—TOTAL, WAGES to ARTIFICERS, &c., } NAVAL YARDS ABROAD - - - }	-	-	2,965
For the Wages of an Engineer and six others, borne on the books of H.M. S. "Bellerophon," for service in Yard Craft - - -	7	7	500
For Allowances in lieu of Provisions and Lodgings to the above, and for Extra Pay under Queen's Regulations - -	-	-	461
P.—TOTAL WAGES, YARD SERVICE AFLOAT, } NAVAL YARDS ABROAD - - - }	-	-	961
Q.—For the Hire of Teams - - - - -	2	2	177
R.—For the Wages of Watchmen and Warders - - -	7	7	497
TOTAL WAGES - - -	57	56	4,600
TOTAL HALIFAX NAVAL YARD - - - £.			6,848

VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS ABROAD— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
BERMUDA:		£.	£.
SALARIED ESTABLISHMENT:			
Naval Officer in charge of Establishments, &c.:			
Sea Pay and Allowances as Captain of the First Class, viz. :—			
Sea Pay -	£. 602		
Command Money -	192		
Allowance for Fuel and Lights -	32		
Civil Allowance -	6		
		832	832
Allowance to Naval Officer in charge, in lieu of a Captain's Cook -	-	40	40
Retinue of Naval Officer in charge:			
Coxswain and three Domestics -	£. 113		
Allowance in lieu of Provisions to ditto; four, at 1s. 6d. a day each -	110	223	222
Naval and Victualling Storekeeper and Accountant -	-	600	600
Chief Engineer borne on the books of H.M.S. "Terror," Full Pay, &c. -	£. 383	501	501
Allowance to ditto in lieu of Charge money -	27		
Allowance to ditto for service in the Dockyard -	91		
Engineer, R.N., borne on the books of H.M.S. "Terror," Full Pay -	183	219	219
Extra Pay to ditto -	36		
Foreman in charge of the Floating Dock, and of Dockyard Work at Bermuda -	-	450	450
Boatswain, R.N., borne on the books of H.M.S. "Terror," Full Pay -	£. 141	187	197
Extra Pay to ditto -	46		
Wages of a Warrant Officer's Servant, borne on the books of H.M.S. "Terror" -	-	20	20
Staff Surgeon, in lieu of a Surgeon, borne on the books of H.M.S. "Terror," Full Pay -	£. 365	401	419
Extra Pay to ditto -	36		
Wages of Servant to ditto, borne on books of H.M.S. "Terror" -	-	20	20
Chaplain, Full Pay -	£. 277	491	491
Civil Allowance to ditto -	214		
Clerk of Works, from 250 <i>l.</i> to 350 <i>l.</i> -	£. 350	400	400
Colonial Allowance to ditto -	50		
Schoolmaster* -	£. 109	172	163
Allowance to ditto in lieu of Provisions -	27		
Special Allowance to ditto -	36		
Schoolmistress of the Female School -	-	25	25
Clerks - { One Senior, from 315 <i>l.</i> to 450 <i>l.</i> per annum -	£. 450	671	657
{ One, from 90 <i>l.</i> to 300 <i>l.</i> per annum -	221		
Allowance to the Clerks to meet the increased cost of living -	-	100	100
Temporary employment of Writers -	-	519	541
Colonial Allowance to one of the above -	-	50	50
K.—SALARIES and ALLOWANCES, NAVAL YARDS ABROAD -	£.	5,921	5,947
L.—Quit Rent for Tatam Island, &c. -	-	10	10
Allowances in lieu of Stationery -	-	57	57
Postage, Advertisements, Chapel Allowances, and other small Expenses -	-	90	90
N.—CONTINGENCIES, NAVAL YARDS ABROAD -	£.	147	147
TOTAL SALARIED ESTABLISHMENT (carried forward) -	£.	6,078	6,104

\* Borne on the books of H. M. S. "Terror" for time only.

VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS ABROAD— <i>continued.</i>			REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
BERMUDA— <i>continued.</i>			£.	£.
Brought forward - - -			6,078	6,104
WAGES:				
For the Wages of Shipwrights, Artificers, and Labourers, &c., viz.:				
	Number of Men.			
	1877/78.	1876/77.		
On the Establishment - - - - -	*38	* 38	4,325	4,260
Hired Artificers and Labourers - - - - -	104	103	6,386	6,292
TOTAL, Established and Hired - - -	142	141	10,711	10,552
For the Wages of Seamen, &c., borne on the Books of H.M.S. "Terror," for Service in the Yard and Floating Dock - - - - -	38	38	1,508	1,508
For Extra Pay to ditto under Queen's Regulations, &c. - - -	-	-	395	390
O.—TOTAL, WAGES to ARTIFICERS, &c., NAVAL YARDS ABROAD - - - - -	180	179	12,614	12,450
For the Wages of Persons employed for Yard Service Afloat in Steam Tugs, Hoys, &c. (borne on Yard Books) - - -	33	33	2,273	2,210
For the Wages of 2 Leading Stokers, borne on the Books of H.M.S. "Terror," for Service in "Spitfire," Yard Craft, and "Bermuda," Mooring Lighter - - - - -	2	2	88	88
P.—TOTAL, WAGES YARD SERVICE AFLOAT, NAVAL YARDS ABROAD - - - - -	-	-	2,361	2,298
Q.—Teams - - - - -	4	4	378	428
R.—For the Wages of Watchmen or Warders - - -	13	13	1,010	1,010
TOTAL WAGES - - - - -	232	231	16,363	16,186
TOTAL BERMUDA NAVAL YARD - - - £.			22,441	22,290
ANTIGUA:				
SALARIED ESTABLISHMENT:				
Clerk in Charge - - - - -	-	-	-	350
K.—Boatswain - - - - -	-	-	141	-
Allowance to ditto in lieu of Provisions - - - - -	-	-	27	-
N.—Postage, Travelling Charges, Stationery Allowance, and other small Contin- gencies - - - - -	-	-	168	-
	-	-	52	50
TOTAL SALARIED ESTABLISHMENT - - - £.	-	-	220	400
WAGES:				
For the Wages of Shipwrights, other Artificers, and Labourers, viz.:				
	Number of Men.			
	1877/78.	1876/77.		
On the Establishment - - - - -	2	2	176	176
Hired Artificers and Labourers - - - - -	10	10	208	208
O.—TOTAL, WAGES to ARTIFICERS, &c., NAVAL YARDS ABROAD - - - - -	12	12	384	384
R.—For the Wages of Watchmen or Warders - - -	1	1	46	46
TOTAL WAGES - - - - -	13	13	430	430
TOTAL ANTIGUA NAVAL YARD - - - £.			650	830

\* Six shipwrights lent from a home yard: their places at home will not be filled up.



VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS ABROAD— <i>continued.</i>			REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
JAMAICA:			£.	£.
SALARIED ESTABLISHMENT:				
Paymaster in charge of Naval and Victualling Stores - - - - -			(Provided for under Vote No. 7.)	
Boatswain, R.N., borne on the books of H. M. S. "Aboukir," Sea Pay -	£. 123		191	141
Allowance to ditto in lieu of Provisions - - - - -	27			155
Allowance to ditto in lieu of a Servant - - - - -	9			18
Extra Pay to ditto - - - - -	32			54
Carpenter, R.N., borne on the books of H. M. S. "Aboukir," Sea Pay -	£. 155		223	63
Allowance to ditto in lieu of Provisions - - - - -	27			
Allowance to ditto in lieu of a Servant - - - - -	9			
Extra Pay to ditto - - - - -	32			
One Clerk, from 90 l. to 300 l. per annum - - - - -	£. 193		293	283
Allowance to ditto to meet increased cost of living - - - - -	100			
Temporary employment of Writers - - - - -	-		300	360
Allowance to two Writers for House Rent - - - - -	-		91	91
Allowance to one Writer to meet increased cost of living - - - - -	-		-	50
Store Porter - - - - -	-		120	120
K.—SALARIES and ALLOWANCES, NAVAL YARDS ABROAD - - - - -	£.		1,218	1,335
Allowance in lieu of Stationery to Paymaster in charge - - - - -	-		16	16
Travelling Charges, Advertisements, and other small Expenses - - - - -	-		25	25
N.—CONTINGENCIES, NAVAL YARDS ABROAD - - - - -	£.		41	41
TOTAL SALARIED ESTABLISHMENT - - - - -	£.		1,259	1,376
WAGES:				
For the Wages of Shipwrights, other Artificers, and Labourers, viz.:				
	Number of Men.			
	1877/78.	1876/77.		
On the Establishment - - - - -	12	12	1,061	1,061
Hired Artificers and Labourers - - - - -	40	38	2,112	2,094
O.—TOTAL, WAGES to ARTIFICERS, NAVAL YARDS ABROAD - - - - -	52	50	3,173	3,155
P.—For the Wages of Persons employed for Yard Service Afloat - - - - - £. 933	16	16	486	486
Abate for Watering Service, chargeable to other Votes and Services - - - - - 447				
Q.—Teams - - - - -	-	-	30	30
R.—For the Wages of Watchmen or Warders - - - - -	10	10	1,009	1,009
TOTAL WAGES - - - - -	78	76	4,698	4,680
TOTAL JAMAICA NAVAL YARD - - - - -	£.		5,957	6,056
ASCENSION:				
The duties connected with the Coaling, &c. Dépôt, are performed by the Naval Garrison of Ascension, assisted by some Kroomen ( <i>see</i> Appendix, No. 2, page 168), the Pay and Special Allowances of the Officers, Seamen, Marines, and others employed being provided for under Vote No. 1 - - - - -			-	-
PORT SAID:				
O.—For the Wages of the Keeper of Admiralty Ground and a Watchman - - - - -	-	-	180	180

## DOCKYARDS ABROAD—continued.

SALARIED ESTABLISHMENT:

<p><b>REQUIRED</b> for the Service of the Year 1877/78.</p>	<p><b>LAST VOTE</b> for the Financial Year 1876/77.</p>
<p>£.</p>	<p>£.</p>

(Provided for under Vote No. 7, Vic-  
tualling Yards, &c.)

## WAGES:

55

55

55

55

## FERNANDO PÒ:

150

150

## CAPE OF GOOD HOPE:

SALARIED ESTABLISHMENT:

539

521

600

600

488

470

503

430

234

234

262

262

622

283

350

350

160

160

160

160

3,918

3,470

28

28

145

110

173

138

4.091

3.608

VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS ABROAD— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
CAPE OF GOOD HOPE— <i>continued.</i>		£.	£.
Brought forward - - -		4,091	3,608
WAGES:			
For the Wages of Shipwrights, Artificers, and Labourers, &c., viz.:			
	Number of Men.		
	1877/78.	1876/77.	
On the Establishment - - - - -	6	6	661
Hired Artificers and Labourers - - - - -	15	15	1,326
TOTAL ESTABLISHED and HIRED - - -	21	21	1,987
For Wages, &c., of Seamen, &c., borne on the Books of Her Majesty's Ship "Flora," for Service in the Yard -	35	35	1,108
For Allowances to some of the above in lieu of Provisions and Lodgings, for Extra Pay under Queen's Regu- lations, &c., and for temporary increase of Pay and Extra Pay to Ship's Artificers - - - - -	-	-	943
O.—TOTAL, WAGES TO ARTIFICERS, &c., } NAVAL YARDS ABROAD - - }	56	56	4,038
For Wages of Engineer, R.N., Boatswain, R.N., &c., borne as above, for service in the "African" Tug, "Swift" Mooring Lighter, and Tank Vessel - - - - -	9	9	526
For Allowances to some of the above in lieu of Provisions and Lodgings - - - - -	-	-	148
P.—TOTAL, WAGES, &c., YARD SERVICE } AFLOAT, NAVAL YARDS ABROAD - - }	-	-	674
Q.—Teams - - - - -	1	1	138
R.—Watchmen or Warders - - - - -	2	2	241
TOTAL WAGES - - - £.	68	68	5,091
TOTAL CAPE OF GOOD HOPE, NAVAL YARD - - - £.			9,182
TRINCOMALIE:			
SALARIED ESTABLISHMENT:			
Naval and Victualling Storekeeper and Accountant - - - - -		600	600
Two Clerks, from 90 l. to 300 l. per annum - - - - -		498	468
Allowance to ditto, to meet increased cost of living - - - - -		100	100
Temporary Employment of Writers - - - - -		141	141
Carpenter borne on the Books of H.M.S. "Undaunted," Full Pay and Tool	£.		
Money - - - - -	155		
Allowance to ditto in lieu of Provisions - - - - -	27	262	262
Allowance to ditto for performing the duties of Foreman of Shipwrights	80		
Allowance to Military Medical Officer for Professional Services - - - - -		137	137
K.—SALARIES and ALLOWANCES, NAVAL YARDS ABROAD - - - £.		1,738	1,708
Allowance in lieu of Stationery to the Naval and Victualling Storekeeper and Accountant - - - - -		30	30
Allowance for a Horse to the Naval and Victualling Storekeeper and Accountant -		43	43
Postage and other small Expenses - - - - -		12	9
N.—CONTINGENCIES, NAVAL YARDS ABROAD - - - - - £.		85	82
TOTAL SALARIED ESTABLISHMENT (carried forward) - - - £.		1,823	1,790



## VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—continued.

## DOCKYARDS ABROAD—continued.

## TRINCOMALIE—continued.

Brought forward - - -

## WAGES:

For the Wages of Shipwrights, other Artificers, and Labourers, viz.:

	Number of Men.		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
	1877/78.	1876/77.		
On the Establishment - - - - -	16	16	327	324
Hired Artificers and Labourers - - - - -	123	28	2,037	459
O.—TOTAL, WAGES TO ARTIFICERS, &c., } NAVAL YARDS ABROAD - - - - -	139	44	2,364	783
R.—For the Wages of Watchmen or Warders - - - - -	10	10	307	300
TOTAL WAGES - - - - -	149	54	2,671	1,083
TOTAL TRINCOMALIE NAVAL YARD - - - £.			4,494	2,873

## SINGAPORE:

## SALARIED ESTABLISHMENT:

K.—Allowance to the Senior Commissariat Officer for taking charge of the Naval Coal Depôt and Stores - - - - -

100

100

## WAGES:

O.—Hired Artificers and Labourers - - - - -

56

59

TOTAL SINGAPORE COAL DEPÔT, &amp;c. - - - £.

156

159

## HONG KONG:

## SALARIED ESTABLISHMENT:

Naval Officer in charge of Establishments, &amp;c.:

Sea Pay and Allowances as Captain of the First Class, viz.:

Sea Pay - - - - -	£. 602	*841	*841
Command Money - - - - -	192		
Allowance in lieu of Fuel and Lights - - - - -	41		
Civil Allowance - - - - -	6		

Retinue of Naval Officer in charge of Establishments:

Coxswain and four Domestics - - - - -	£. 141	278	278
Allowance in lieu of Provisions to ditto, five at 1s. 6d. a day each	137		

† Staff Commander, R.N., acting as Master Attendant:

Full Pay - - - - -	£. 365	737	737
Civil Allowance - - - - -	335		
Allowance in lieu of Provisions, at 2 s. a day - - - - -	37		

Carried forward - - - £.

1,856

1,856

\* Note.—In addition to the foregoing, the Naval Officer in Charge is paid the following sums as Commodore of the 2nd Class, for his naval duties, provided for under Vote No. 1:—

Allowance, at 10 s. a day - - - - -	£. 182 10 -
Table money, at 20 s. a day - - - - -	365 - -
	£. 547 10 -

† Borne on the Books of Her Majesty's Ship "Victor Emanuel."

VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—*continued.*

DOCKYARDS ABROAD— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
HONG KONG— <i>continued.</i>			
Salaried Establishment— <i>continued.</i>		£.	£.
Brought forward - - -		1,856	1,856
Inspector of Machinery Afloat, borne on the books of H.M. Ship "Audacious," for Service in Steam Factory:			
Full Pay - - - - -	£. 456	748	748
Allowance to ditto in lieu of Provisions, at 2s. a day - - -	37		
Extra Pay to ditto - - - - -	55		
Allowance to ditto for House Rent - - - - -	200		
* Three Engineers, R.N. - - - - - Full Pay		548	548
Allowances to ditto in lieu of Provisions, at 2s. a day each - - -	109	109	109
Extra Pay to ditto, under Queen's Regulations, &c. - - -	282	282	282
Foreman of the Yard (Acting) - - - - - £. 450		600	600
Allowance to ditto for House Rent - - - - -	150		
* Carpenter, R.N., Acting as Assistant Master Shipwright:			
Full Pay, &c. - - - - -	£. 146	177	177
Extra Pay to ditto, under Queen's Regulations, &c. - - -	31		
* Boatswain, R.N.:			
Full Pay - - - - -	£. 151	323	286
Allowance to ditto in lieu of Provisions, at 1s. 6d. a day - - -	27		
Civil Allowance to ditto - - - - -	68		
Allowance to ditto for House Rent - - - - -	77		
Chaplain, R.N.:			
Full Pay - - - - -	£. 219	319	319
Civil Allowance to ditto - - - - -	100		
Surgeon of H.M. Ship "Victor Emanuel," for additional duties in attending the Dockyard men and their families (Allowance in addition to Sea Pay) - -		46	46
* Paymaster, R.N., doing duty as Naval and Victualling Storekeeper:			
Full Pay - - - - -	£. 365	842	778
Allowance to ditto in lieu of Provisions - - - - -	27		
Allowance to ditto to meet increased cost of living - - -	200		
Allowance to ditto for House Rent - - - - -	250		
Accountant - - - - - £. 600		900	1,000
Allowance to ditto to meet increased cost of living - - -	100		
Allowance to ditto for House Rent - - - - -	200		
Senior Clerk, from 315 <i>l.</i> to 450 <i>l.</i> per annum - - - - - £. 366		766	756
Clerk, at 400 <i>l.</i> per annum - - - - -	400		
Allowance to ditto to meet the increased cost of living - - -	200	200	200
Allowance to ditto for House Rent - - - - -	300	300	300
Mechanic Writer - - - - -		149	—
Temporary employment of Writers - - - - -		2,805	2,794
Writer borne on the books of H.M. Ship "Victor Emanuel":			
Full Pay - - - - -	—	—	84
Allowance to ditto in lieu of Provisions - - - - -	—		
Extra Pay to ditto - - - - -	—		
K.—SALARIES AND ALLOWANCES, NAVAL YARDS ABROAD - - - £.		10,970	10,883
Allowances in lieu of Stationery - - - - -		52	52
Postage, Boat-hire, Advertisements, and other small Expenses - - -		60	60
N.—CONTINGENCIES, NAVAL YARDS ABROAD - - - £.		112	112
TOTAL SALARIED ESTABLISHMENT (carried forward), - - - £.		11,082	10,995

\* Borne on the Books of H.M. Ship "Victor Emanuel."

VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—continued.

DOCKYARDS ABROAD— <i>continued.</i>			REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
HONG KONG— <i>continued.</i>			£.	£.
Brought forward - - -			11,082	10,995
<b>WAGES:</b>				
For the Wages of Shipwrights, Artificers, and Labourers, &c., viz.:				
	Number of Men.			
	1877/78.	1876/77.		
On the Establishment - - - - -	2	2	420	420
Hired Artificers and Labourers - - - - -	232	209	7,328	7,311
TOTAL Established and Hired - - - - -	234	211	7,748	7,731
For the Wages of Seamen, &c., borne on the books of Her Majesty's Ship "Victor Emanuel," for Service in the Yard - - - - -	27	27	1,262	1,262
For Allowances in lieu of Provisions and Quarters to some of the above, and for Extra Pay, &c. under Queen's Regulations, &c. - - - - -	—	—	1,212	1,150
O.—TOTAL, WAGES TO ARTIFICERS, &c., NAVAL YARDS ABROAD - - - - -	261	238	10,222	10,143
For the Wages of Persons employed for Yard Service Afloat, borne on the Yard Books - - - - -	15	15	330	343
For the Wages of 1 Coxswain of Launch, 2 Chinese Stokers, and 1 Chief Boatswain's Mate, borne on the books of Her Majesty's Ship "Victor Emanuel" for Yard Service Afloat (160 <i>l.</i> ), and Pay, &c. of 2 Chinese Lightermen (41 <i>l.</i> ) - - - - -	6	6	201	201
For Allowances in lieu of Provisions to some of the above, and for Extra Pay under Queen's Regulations, &c. - - - - -	—	—	200	200
P.—TOTAL, WAGES, &c., YARD SERVICE AFLOAT, NAVAL YARDS ABROAD - - - - -	-	-	731	744
R.—For the Wages and Clothing of the Police employed in the Yard - - - - -	36	36	3,318	3,448
TOTAL WAGES - - - - £.	318	295	14,271	14,335
TOTAL HONG KONG NAVAL YARD - - - £.			25,353	25,330
<b>ESQUIMALT (VANCOUVER):</b>				
SALARIED ESTABLISHMENT:				
Naval Storekeeper (Salary, &c. provided for under Vote No. 7) - - - - -	-	-	-	-
Boatswain, R.N., borne on the books of H.M.S. "Repulse," Sea Pay - £. 151	-	-	-	-
Extra Pay to ditto - - - - -	-	-	36	36
Allowance to ditto in lieu of a Servant - - - - -	-	-	9	9
Allowance to ditto in lieu of Provisions - - - - -	-	-	27	27
K.—SALARIES AND ALLOWANCES, NAVAL YARDS ABROAD - - - £.	-	-	223	196
("Contingencies" provided for under Vote No. 7.)				
<b>WAGES:</b>				
O.—For the Wages of Artificers, &c.:	Number of Men.			
	1877/78.	1876/77.		
On the Establishment - - - - -	3	3	598	580
Hired Artificers and Labourers - - - - -	2	2	182	212
TOTAL Established and Hired - - - - -	5	5	780	792
For the Wages of a Leading Stoker, borne on the books of H.M.S. "Repulse" - - - - -	1	—	44	-
Extra Pay to ditto under Queen's Regulations - - - - -	—	—	23	-
TOTAL - - - - -	6	5	847	792
TOTAL ESQUIMALT NAVAL ESTABLISHMENT - - - £.			1,070	988



## VOTE 6.--DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD--continued.

DOCKYARDS ABROAD--continued.		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
SHANGHAI:		£.	£.
SALARIED ESTABLISHMENT:			
Paymaster, R.N., in charge of Naval and Victualling Stores and Coal Depôt (borne on books of Her Majesty's Ship "Victor Emanuel"), viz. :—			
Full Pay - - - - -	£. 274	584	566
Allowance to ditto for House Rent - - - - -	64		
Allowance in lieu of Provisions - - - - -	27		
Allowance to meet extra cost of living on shore - - - - -	100		
Allowance for charge of Stores and of Coal Depôt - - - - -	119		
K.—SALARIES AND ALLOWANCES, NAVAL YARDS ABROAD - - - - -	£.	584	566
L.—WATER - - - - -	£.	40	40
Allowance in lieu of Stationery - - - - -		15	15
Postage, Advertisements, and other small Expenses - - - - -		35	45
N.—CONTINGENCIES, NAVAL YARDS ABROAD - - - - -	£.	50	60
TOTAL SALARIED ESTABLISHMENT - - - - -	£.	674	666
WAGES:			
For Wages of 32 Natives employed in various capacities, for Service of the Yard, and for occasional Coolie hire - - - - -		880	916
For Wages, &c. of two Ship's Stewards, borne on the books of Her Majesty's Ship "Victor Emanuel" - - - - -		200	200
For Allowances to Ship's Stewards in lieu of Provisions - - - - -		55	54
For Allowances to ditto as Store Issuers - - - - -		36	36
O.—TOTAL, WAGES TO ARTIFICERS, &c., NAVAL YARDS ABROAD - - - - -	£.	1,171	1,206
TOTAL SHANGHAI ESTABLISHMENT - - - - -	£.	1,845	1,872
SYDNEY:			
SALARIED ESTABLISHMENT:			
*Paymaster, R.N., in charge of Naval, Victualling, and Medical Stores (borne on books of Her Majesty's Ship "Wolverene"), viz. :—			
Full Pay - - - - -	£. 601	978	978
Allowance in lieu of Provisions - - - - -	27		
Allowance to meet extra cost of living on shore - - - - -	100		
Allowance for House Rent - - - - -	250		
Mechanic Writer - - - - -	£. 110	160	237
Allowance in lieu of Lodgings - - - - -	50		
Carried forward - - - - -	£.	1,138	1,215

\* Also in receipt of an Allowance of 50 l. per annum payable out of Convict Funds.



VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—continued.

A B S T R A C T .

Y A R D .	A.		B.		C.		D.		E. - - - -			
	Salaries and Allowances.		Rents, Water, &c.		Gas.		Contingencies.		W A G E S . - - - -			
	Established. (Mechanic Writers employed under Professional Officers, marked t.)		Hired (including Steam Factory).									
	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.
	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.
AT HOME.												
DEPTFORD - - -	1,706	1,671	-	-	-	-	64	64	3,883	3,767	1,472	1,459
CHATHAM - - -	21,849	20,434	385	164	1,000	1,300	777	802	113,163 † 1,982	Under revision.	106,975	Under revision.
SHEERNESS - - -	16,985	16,655	1	1	1,000	1,050	545	545	68,667 † 694		42,178	
PORTSMOUTH - - -	28,037	26,254	2,464	2,467	2,700	2,500	1,177	1,117	162,586 † 3,967		162,258	
DEVONPORT - - -	30,148	29,606	1,046	1,047	1,700	1,700	961	911	145,240 † 750		137,323	
PEMBROKE - - -	10,586	10,265	10	10	850	1,080	629	594	56,927		40,165	
HAULBOWLINE - - -	-	-	-	-	-	-	-	-	-	-	759	759
PORTLAND - - -	664	649	5	5	-	-	207	207	-	-	73	-
									Abate—Labour at the several Yards, in Making and Repairing Yard Machinery (chargeable to Vote No. 11, New Works, &c.), and provided for under that Vote			
TOTAL of YARDS at HOME - - -	109,975	105,734	3,911	3,694	7,250	7,630	4,360	4,300	557,859	-	491,203	-
ABROAD.												
	K.		L.		M.		N.		O. - - - -			
GIBRALTAR - - -	2,187	2,146	471	511	120	120	100	60	757	172	3,604	3,550
MALTA - - -	10,306	9,681	-	-	280	280	240	240	4,009 † 245	3,794 † 245	22,755	14,402
HALIFAX - - -	1,916	1,896	180	180	80	80	72	62	1,140	1,124	1,531	1,488
BERMUDA - - -	5,921	5,947	10	10	-	-	147	147	4,325	4,260	6,386	6,292
ANTIGUA - - -	168	350	-	-	-	-	52	50	176	176	208	208
JAMAICA - - -	1,218	1,335	-	-	-	-	41	41	1,061	1,061	2,112	2,094
ASCENSION - - -	-	-	-	-	-	-	-	-	-	-	-	-
PORT SAID - - -	-	-	-	-	-	-	-	-	-	-	180	180
SIERRA LEONE - - -	-	-	-	-	-	-	-	-	-	-	55	55
BERNARDO Po - - -	150	150	-	-	-	-	-	-	-	-	-	-
CAPE OF GOOD HOPE - - -	3,918	3,470	-	-	-	-	173	138	661	660	1,326	1,314
TRINCOMALIE - - -	1,738	1,708	-	-	-	-	85	82	327	324	2,037	459
SINGAPORE - - -	100	100	-	-	-	-	-	-	-	-	56	59
HONG KONG - - -	10,970	10,883	-	-	-	-	112	112	420	420	7,328	7,311
ESQUIMALT - - -	223	196	-	-	-	-	-	-	598	580	182	212
SHANGHAI - - -	584	566	40	40	-	-	50	60	-	-	880	916
SYDNEY - - -	1,477	1,554	-	-	-	-	38	38	118	118	125	125
									Abate—Labour at the several Yards, in Making and Repairing Yard Machinery (chargeable to Vote No. 11, New Works, &c.), and provided for under that Vote			
TOTAL of YARDS ABROAD - - -	40,876	39,982	701	741	480	480	1,110	1,030	13,837	12,934	48,765	38,665
TOTAL of YARDS at HOME and ABROAD - - -	150,851	145,716	4,612	4,435	7,730	8,110	5,470	5,330	571,696	-	539,968	-

Memo.:-  
For Programme of Shipbuilding Works to be undertaken in Her Majesty's Dockyards during the year 1877-78 - - - See Appendix, No. 11, p. 179.  
For Statement of the Number and Description of Workmen authorised as the Establishments at the several Dockyards at Home - - - " No. 12, p. 188.  
For Statement of the Distribution of hired Artificers, Labourers, &c. in the several Dockyards at Home - - - " No. 13, p. 189.  
For Abstract of foregoing Appendices, Nos. 12 and 13 - - - " No. 14, p. 190.



VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—continued.

A B S T R A C T.

E.				F.		G.		H.		Required for the Service of the Year 1877-78.	Last Vote for the Financial Year 1876-77.
WAGES.				Wages, Yard Service Afloat.		Hire of Teams.		Wages, &c., Police Force.			
Artificers, &c. of the Fleet.		TOTAL. (Mechanic Writers em- ployed under Professional Officers, marked †.)									
1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.		
£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.
-	-	5,355	5,226	70	70	-	-	265	265	7,460	7,296
-	-	220,138 † 1,982	219,472 † 1,997	3,500	3,560	2,667	1,766	7,384	7,396	259,682	256,891
-	-	110,845 † 694	110,522 † 694	5,555	5,656	1,459	1,459	2,796	2,804	139,880	139,586
-	-	324,844 † 3,967	324,199 † 3,967	8,483	8,914	2,660	2,660	10,998	8,077	385,330	380,215
-	-	282,563 † 750	280,754 † 735	9,948	9,901	2,523	1,964	7,327	7,349	336,966	333,967
-	-	97,092	97,017	888	946	975	975	2,210	2,210	113,240	113,097
-	-	759	759	-	-	-	-	506	80	1,265	839
-	-	75	-	-	-	-	-	-	-	949	861
-	-	1,049,062 34,233	1,045,342 29,395	-	-	-	-	-	-	1,244,772 34,233	1,232,752 29,395
-	-	1,014,829	1,015,947	28,444	29,047	10,284	8,824	31,486	28,181	1,210,539	1,203,357

O.				P.		Q.		R.			
322	-	4,683	3,722	493	493	-	-	514	367	8,568	7,419
-	-	26,764 245	18,196 245	1,572	1,582	-	-	3,231	3,326	42,698	33,550
294	294	2,965	2,906	961	960	177	177	497	497	6,848	6,758
1,903	1,898	12,614	12,450	2,361	2,298	378	428	1,010	1,010	22,441	22,290
-	-	384	384	-	-	-	-	46	46	650	830
-	-	3,173	3,155	486	486	30	30	1,009	1,009	5,957	6,056
-	-	-	-	-	-	-	-	-	-	-	-
-	-	180	180	-	-	-	-	-	-	180	180
-	-	55	55	-	-	-	-	-	-	55	55
-	-	-	-	-	-	-	-	-	-	150	150
2,051	2,108	4,038	4,082	674	666	138	138	241	241	9,182	8,735
-	-	2,364	783	-	-	-	-	307	300	4,494	2,873
-	-	56	59	-	-	-	-	-	-	156	159
2,474	2,412	10,222	10,143	731	744	-	-	3,318	3,448	25,353	25,330
67	-	847	792	-	-	-	-	-	-	1,070	988
291	290	1,171	1,206	-	-	-	-	-	-	1,845	1,872
189	189	432	432	-	-	-	-	-	-	1,947	2,024
-	-	70,193 3,023	58,790 2,426	-	-	-	-	-	-	131,534 3,023	119,269 2,426
7,591	7,191	67,170	56,364	7,278	7,229	723	773	10,173	10,244	128,511	116,843
7,591	7,191	1,081,999	1,072,311	35,722	36,276	11,007	9,597	41,659	38,425	1,339,050	1,320,200
I.—Extra Pay to Artificers, &c. of the Fleet, Dock Yards at Home										250	300
S.— Ditto - - ditto - - - Naval Yards Abroad										2,380	3,250
TOTAL - - £.										1,341,680	1,323,750

VOTE 7.

VICTUALLING YARDS AT HOME AND ABROAD.

I. ESTIMATE of the Sum which will be required in the Year ending 31st March 1878, to defray the Expense of the VICTUALLING YARDS at HOME and ABROAD.

Seventy-six Thousand Nine Hundred and Thirty Pounds.

II. SUB-HEADS under which this Vote will be accounted for.

	1877-78.	1876-77.	INCREASE.	DECREASE.	
	£.	£.	£.	£.	
A.—SALARIES AND ALLOWANCES - VICTUALLING YARDS AT HOME	14,906	14,734	172	—	
B.—RENTS, WATER, &c. - - - - - DITTO - - -	618	618	—	—	
C.—GAS - - - - - DITTO - - -	1,070	1,070	—	—	
D.—CONTINGENCIES - - - - - DITTO - - -	634	534	100	—	
E.—WAGES TO ARTIFICERS, &c. - - - - - DITTO - - -	33,707	34,032	—	325	
F.—WAGES, &c., VICTUALLING YARD HOYS - - - DITTO - - -	6,315	6,304	11	—	
G.—WAGES, POLICE FORCE - - - - - DITTO - - -	5,231	4,979	252	—	
H.—SALARIES AND ALLOWANCES - VICTUALLING YARDS ABROAD	6,631	6,415	216	—	
I.—RENTS, WATER, &c. - - - - - DITTO - - -	145	145	—	—	
K.—GAS - - - - - DITTO - - -	115	115	—	—	
L.—CONTINGENCIES - - - - - DITTO - - -	231	238	—	7	
M.—WAGES TO ARTIFICERS, &c. - - - - - DITTO - - -	7,207	7,096	111	—	
N.—EXTRA PAY TO ARTIFICERS, &c., OF THE FLEET EMPLOYED IN VICTUALLING YARDS AT HOME AND ABROAD - - - -	120	120	—	—	
£.	76,930	76,400	530	332	Actual Expenditure in 1875-76. £. 74,339

NET INCREASE - - £. 530.

Note.—The cost of keeping in repair Victualling Yard Hoys, &c., amounting on an average to about 2,600 l. per annum, is provided for under Votes 6 and 10.

## VOTE 7.—VICTUALLING YARDS AT HOME AND ABROAD—continued.

## III.

## DETAILS of the foregoing.

## VICTUALLING YARDS AT HOME.

## ROYAL VICTORIA YARD, DEPTFORD:

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
	£.	£.
SALARIED ESTABLISHMENT: £.		
*Superintending Storekeeper - - - - - 700		
Per-centage to ditto upon Payments of Wages - - - - - 4	704	704
*Store Receiver and Accountant - - - - - £.	600	600
*Fleet Surgeon and Medical Storekeeper - - - - - 547		
Allowance to ditto in lieu of Provisions for himself and Servants, and for Fuel and Light - - - - - 53	600	583
Clerks: £.		
2 Senior Clerks, from 315 l. to 450 l. per annum - - - - - 900		
7 Clerks, from 90 l. to 300 l. per annum - - - - - 1,945 (One Senior Clerk and one Clerk are provided with Residences.)		
7 Writers, from 80 l. to 160 l. per annum - - - - - 917		
Add,—Amount required for temporary Employment of Writers, and for Salaries of Clerks provisionally employed in lieu of Writers - 1,168	4,930	4,983
*Boatswain of the Yard (Increase of 25 l. per annum, not to be continued to his successor) - - - - -	175	175
Master Cooper, from 200 l. to 250 l. per annum - - - - -	200	200
Foreman of Coopers - - - - -	150	150
Superintendent of the Manufacture of Chocolate and Mustard - - - - -	170	170
Foreman of Storehouses - - - - -	120	120
Leading Man of Bakers - - - - -	120	120
Dispensary Assistant (salary on a new appointment to be 100 l.) - - - - - £.	120	120
Leading Man of Millers - - - - - 120		
Allowance to ditto for House Rent - - - - - 20	140	140
Director of Works Department:		
*Foreman of Works, 120 l. to 180 l. per annum - - - - -	180	180
Compensation to Officers occupying Official Residences for Payment of House Duty	16	16
A.—SALARIES AND ALLOWANCES, VICTUALLING YARDS AT HOME (carried forward) - - - - - £.	8,225	8,261

\* In occupation of an official residence or quarters.



VOTE 7.—VICTUALLING YARDS AT HOME AND ABROAD—*continued.*

VICTUALLING YARDS AT HOME— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
ROYAL VICTORIA YARD, DEPTFORD— <i>continued.</i>			
Salaried Establishment— <i>continued.</i>		£.	£.
Brought forward - - -		8,225	8,261
Tithes - - - - -		10	10
Water supplied for Victualling Yard - - - - -		350	350
B.—RENTS, WATER, &c., VICTUALLING YARDS AT HOME - - - - £.		360	360
C.—Making Gas at Government Works - - - - - £.		700	700
Allowances in lieu of Stationery - - - - -		45	45
Postage and Travelling Charges on the Public Service, Allowance for destroying Vermin, and other small Expenses - - - - -		220	150
D.—CONTINGENCIES, VICTUALLING YARDS AT HOME - - - - £.		265	195
TOTAL SALARIED ESTABLISHMENT - - - £.		9,550	9,516
WAGES:			
For the Wages of Artificers and Labourers, viz.:			
		Number of Men.	
		1877/78.	1876/77.
On the Establishment - - - - -		198	198
Hired Artificers and Labourers - - - - -		192	192
E.—WAGES TO ARTIFICERS, &c., VICTUALLING YARDS AT HOME		390	390
		20,492	20,497
For the Wages of Crews of Victualling Yard Hoys - - - - -		1,524	1,524
For Cost of Victualling Crews, or Allowances in lieu - - - - -		835	827
F.—WAGES, &c., VICTUALLING YARD HOYS, VICTUALLING YARDS AT HOME		2,359	2,351
G.—For Wages of the Metropolitan Police Force employed in the Yard, under Act 23 & 24 Vict. c. 135 (including Commutation for Clothing, Fuel, and Contingent Expenses, for Inspectors at 9 <i>l.</i> 13 <i>s.</i> 3 <i>d.</i> , for Serjeants and Constables at 7 <i>l.</i> 9 <i>s.</i> 3 <i>d.</i> per Man per Annum, and for General Superintendence, at 1 <i>l.</i> 2 <i>s.</i> 10 <i>d.</i> per Man per Annum):			
		£.	
1 Superintendent (proportion of pay) - - - - -		56	
2 Inspectors - - - - -		344	
5 Serjeants - - - - -		503	
16 Constables - - - - -		1,311	
24		2,214	2,219
TOTAL WAGES - - - £.		25,065	25,067
TOTAL ROYAL VICTORIA YARD - - - £.		34,615	34,583

VOTE 7.—VICTUALLING YARDS AT HOME AND ABROAD—*continued.*VICTUALLING YARDS AT HOME—*continued.*

## ROYAL CLARENCE YARD, GOSPORT:

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
<b>*Superintending Storekeeper -</b>	£. 550	£. 550
<b>Clerks:</b>		
1 Senior Clerk (acting), from 315 l. to 450 l. per annum -	300	
3 Clerks† from 90 l. to 300 l. per annum -	367	
(One Senior Clerk and one Clerk are provided with Residences.)		
2 Writers from 80 l. to 160 l. per annum -	240	
Add,—Amount required for temporary Employment of Civil Service Writers -	274	
	1,181	
Less,—Contribution from Indian Government to meet Salary of one Clerk employed on Overland Troop Service -	186	
	995	974
Chief Carpenter, R.N., borne on the books of H.M. Ship "Asia," in charge of Tanks, Full Pay and Tool Money -	£. 169	
Allowance to ditto in lieu of Provisions -	27	
Allowance to ditto for House Rent -	18	
	214	214
Leading Man of Coopers - (Salary on a new appointment to be 120 l.)	150	150
	£. 120	
Leading Man of Millers and Bakers - Salary -	120	
Extra Pay for employment after hours -	4	
	124	124
*Engineer - Salary -	120	
Extra Pay for employment after hours -	20	
	140	130
Director of Works Department:		
*Clerk of Works, from 190 l. to 300 l. per annum -	300	300
Draughtsman, from 90 l. to 300 l. per annum -	140	130
Compensation to Officers occupying Official Residences for payment of House Duty	8	8
A.—SALARIES AND ALLOWANCES, VICTUALLING YARDS AT HOME - £.	2,621	2,580
Rents (Capon Money and Quit Rent) -	2	2
B.—RENTS, WATER, &c., VICTUALLING YARDS AT HOME - £.	2	2
C.—Lighting the Yard with Gas -	250	250
Allowances in lieu of Stationery -	24	24
Postage and Travelling Charges on the Public Service, Advertisements, Carting Rubbish, Allowance for destroying Vermin, and other small Expenses -	90	80
D.—CONTINGENCIES, VICTUALLING YARDS AT HOME - £.	114	104
TOTAL SALARIED ESTABLISHMENT (carried forward) £.	2,987	2,936

\* In occupation of an official residence or quarters.

† Two clerks only at present borne and provided for, the vacancy being temporarily filled by a Civil Service Writer.

VOTE 7.—VICTUALLING YARDS AT HOME AND ABROAD—*continued.*

VICTUALLING YARDS AT HOME— <i>continued.</i>				REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
ROYAL CLARENCE YARD, GOSPORT— <i>continued.</i>				£.	£.
Brought forward - - -				2,987	2,986
WAGES:					
				Number of Men.	
				1877/78.	1876/77.
For the Wages of Artificers and Labourers, viz:					
On the Establishment - - - - -				77	77
Hired Artificers and Labourers - - - - -				39	39
				116	116
Less,—Proportion of Wages of Leading Man, Storehouseman, and 7 Labourers, repayable by the India Government (Troop Service Account) - - -				371	371
E.—WAGES TO ARTIFICERS, &c., VICTUALLING YARDS AT HOME - - - £.				6,564	6,529
For the Wages of Crews of Victualling Yard Hoys - - - - -				1,328	1,326
For Allowances in lieu of Victualling, &c. to Crews - - - - -				812	812
F.—WAGES, &c., VICTUALLING YARD HOYS, VICTUALLING YARDS AT HOME - £.				2,140	2,138
G.—For Wages of the Metropolitan Police Force employed in the Yard, under Act 23 & 24 Vict. c. 135 (including Commutation for Clothing, Fuel, and Con- tingent Expenses, for Inspectors, at 9 l. 13 s. 3 d., for Serjeants, and Constables, at 7 l. 9 s. 3 d. per Man per Annum, and for General Superintendence, at 1 l. 2 s. 10 d. per Man per Annum)					
1 Inspector - - - - -				£.	
3 Serjeants - - - - -				172	
11 Constables - - - - -				302	
15				901	
				1,375	1,380
TOTAL WAGES - - - £.				10,079	10,047
TOTAL ROYAL CLARENCE YARD - - - £.				13,066	12,983
ROYAL WILLIAM YARD, PLYMOUTH:					
SALARIED ESTABLISHMENT:					
*Superintending Storekeeper - - - - -				550	550
Clerks:					
*1 Senior Clerk, from 315 l. to 450 l. per annum - - - - -				£.	
2 Clerks, from 90 l. to 300 l. per annum - - - - -				450	
2 Writers, from 80 l. to 160 l. per annum - - - - -				530	
Temporary employment of a Civil Service Writer - - - - -				264	
				91	
				1,335	1,219
Leading Man of Coopers - - - - -				120	120
Leading Man of Millers and Bakers - - - - -				120	120
*Engineer - - - - -				138	138
Labourer in charge at Brixham - - - - -				34	34
Director of Works Department:					
Assistant Civil Engineer, from 315 l. to 500 l. per annum - - - - -				£. 379	
Allowance to ditto for House Rent - - - - -				50	
				429	414
Accountant Clerk, from 90 l. to 300 l. per annum - - - - -				293	283
Compensation to Officers occupying Official Residences for payment of House Duty				7	7
A.—SALARIES AND ALLOWANCES, VICTUALLING YARDS AT HOME (carried forward) - - - - -				£.	
				3,026	2,885

\* In occupation of an official residence or quarters.



VOTE 7.—VICTUALLING YARDS AT HOME AND ABROAD—*continued.*

VICTUALLING YARDS AT HOME— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
ROYAL WILLIAM YARD, PLYMOUTH— <i>continued.</i>			
Salaried Establishment— <i>continued.</i>		£.	£.
Brought forward - - -		3,026	2,885
Rent of Water - - - - -		250	250
Rent of Land and Right of Way for Water-pipes, &c. - - - - -		4	4
B.—RENTS, WATER, &c., VICTUALLING YARDS AT HOME - - - - -	£.	254	254
C.—Lighting the Yard with Gas - - - - -		120	120
Allowances in lieu of Stationery - - - - -		30	30
Postage and Travelling Charges on the Public Service, Advertisements, Allowance for destroying Vermin, and other small Expenses - - - - -		190	170
D.—CONTINGENCIES, VICTUALLING YARDS AT HOME - - - - -	£.	220	200
TOTAL SALARIED ESTABLISHMENT - - - - -	£.	3,620	3,459
WAGES:			
For the Wages of Artificers and Labourers, viz.:	Number of Men.		
	1877/78. 1876/77.		
On the Establishment - - - - -	71 71		
Hired Artificers and Labourers - - - - -	36 36	5,975	5,998
E.—WAGES TO ARTIFICERS, &c., VICTUALLING YARDS AT HOME - - - - -	107 107		
For the Wages of Crews of Victualling Yard Hoys - - - - -		1,051	1,050
For Allowances in lieu of Victualling, &c., to Crews - - - - -		634	634
F.—WAGES, &c., VICTUALLING YARD HOYS, VICTUALLING YARDS AT HOME £.		1,685	1,684
G.—For Wages of the Metropolitan Police Force employed in the Yard, under Act 23 & 24 Vict. c. 135 (including Commutation for Clothing, Fuel, and Con- tingent Expenses, for Inspectors at 9 l. 13 s. 3 d., for Serjeants and Constables at 7 l. 9 s. 3 d. per Man per Annum, and for General Superintendence at 1 l. 2 s. 10 d. per Man per Annum):			
1 Inspector - - - - -	£. 172		
3 Serjeants - - - - -	302		
11 Constables - - - - -	901	1,375	1,380
15			
TOTAL WAGES - - - - -	£.	9,035	9,057
TOTAL ROYAL WILLIAM YARD - - - - -	£.	12,655	12,516

VOTE 7.—VICTUALLING YARDS AT HOME AND ABROAD—*continued.*

VICTUALLING YARDS AT HOME— <i>continued.</i>			REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
HAULBOWLINE VICTUALLING YARD:			£.	£.
SALARIED ESTABLISHMENT:				
*Naval and Victualling Storekeeper and Accountant	-	-	500	
Per-centage to ditto upon Payments of Wages	-	-	3	
			503	503
*Two Clerks,† from 90 l. to 300 l. per annum	-	-	449	423
*Non-commissioned Officer of Marines employed as Clerk, &c., at 4 s. 6 d. a day, in addition to his Pension	-	-	82	82
A.—SALARIES AND ALLOWANCES, VICTUALLING YARDS AT HOME	-	-	1,034	1,008
B.—Tithe Rent	-	-	2	2
Allowance in lieu of Stationery	-	-	10	10
Postage and Travelling Charges on the Public Service, Advertisements, and other small Expenses	-	-	25	25
D.—CONTINGENCIES, VICTUALLING YARDS AT HOME	-	-	35	35
TOTAL SALARIED ESTABLISHMENT	-	-	1,071	1,045
WAGES:				
			Number of Men.	
			1877/78.	1876/77.
For the Wages of Artificers, Labourers, Watchmen, &c., viz.:				
On the Establishment	-	-	13	13
Hired Artificers and Labourers	-	-	4	4
E.—WAGES TO ARTIFICERS, &c., VICTUALLING YARDS AT HOME			17	17
			1,126	1,393
For the Wages of Crews of Victualling Yard Hoys	-	-	82	82
For Allowances in lieu of Victualling, &c., to Crews	-	-	49	49
F.—WAGES, &c., VICTUALLING YARD HOYS, VICTUALLING YARDS AT HOME	-	-	131	131
G.—For the Wages of the Royal Irish Constabulary employed in Watching and Protecting Duties	-	-	267	—
TOTAL WAGES	-	-	1,524	1,524
TOTAL HAULBOWLINE VICTUALLING YARD	-	-	2,595	2,569

\* In occupation of an official residence or quarters.

† On a vacancy occurring, a writer will be substituted for a clerk at Haulbowline.

## VOTE 7.—VICTUALLING YARDS AT HOME AND ABROAD—continued.

## VICTUALLING YARDS ABROAD.\*

REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
--	--

£.

£.

## GIBRALTAR:

SALARIED ESTABLISHMENT - - - - -

{ Provided for under Vote No. 6, Dock-yards and Naval Yards at Home and Abroad.

## WAGES:

Number of Men.

1877/78.

1876/77.

M.—For the Wages of Artificers and Labourers, &amp;c., viz.:

On the Establishment - - - - -

5

5

300

290

TOTAL GIBRALTAR VICTUALLING YARD - - - £.

300

290

## MALTA:

Victualling Storekeeper and Accountant (Duties performed by Naval Storekeeper) - - - - -

Clerks - - -	{ 1 Senior, from 315 l. to 450 l. per annum - - - £. 417		
	{ 2†, from 90 l. to 300 l. per annum - - - 418	835	795

835

795

Allowance to two Clerks for House Rent - - - - -

60

60

Temporary Employment of a Writer - - - - -

146

146

Master Miller and Baker - - - - -

175

175

H.—SALARIES AND ALLOWANCES, VICTUALLING YARDS ABROAD - - - £.

1,216

1,176

K.—Lighting the Yard with Gas - - - - -

100

100

Allowance in lieu of Stationery to the Victualling Storekeeper and Accountant - - -

15

15

Advertisements and other small Expenses - - - - -

20

20

L.—CONTINGENCIES, VICTUALLING YARDS ABROAD - - - £.

35

35

TOTAL SALARIED ESTABLISHMENT - - - £.

1,351

1,311

## WAGES:

Number of Men.

1877/78.

1876/77.

M.—For the Wages of Artificers and Labourers, viz.:

On the Establishment - - - - -

16

16

925

898

Hired Artificers and Labourers - - - - -

52

52

1,307

1,300

TOTAL WAGES - - -

68

68

2,232

2,198

TOTAL MALTA VICTUALLING YARD - - - £.

3,583

3,509

\* Note.—Salaried Officers and Clerks at the Victualling Establishments Abroad are in occupation of official residences or quarters, or in receipt of allowances in lieu.

† Native clerks and writers will be appointed at revised rates of pay as vacancies occur.



VOTE 7.—VICTUALLING YARDS AT HOME AND ABROAD—*continued.*

VICTUALLING YARDS ABROAD— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
HALIFAX:		£.	£.
Victualling Storekeeper and Accountant (paid as Naval Storekeeper and Accountant)	£.	—	—
Clerk, from 90 L. to 300 L. per annum	272		
Allowance to ditto, to meet the increased cost of living	50		
		322	307
H.—SALARIES AND ALLOWANCES, VICTUALLING YARDS ABROAD	£.	322	307
I.—Rent of Fire Hydrant		20	20
K.—Lighting the Yard with Gas		15	15
Allowance in lieu of Stationery to the Victualling Storekeeper and Accountant		6	6
Fuel, Advertisements, and other small Expenses		9	11
L.—CONTINGENCIES, VICTUALLING YARDS ABROAD	£.	15	17
TOTAL SALARIED ESTABLISHMENT	£.	372	359

## WAGES:

	Number of Men.			
	1877/78.	1876/77.		
M.—For the Wages of Artificers and Labourers, viz.:				
On the Establishment	1	1	128	101
Hired Artificers and Labourers	1	1	81	81
TOTAL WAGES	2	2	209	182
TOTAL HALIFAX VICTUALLING YARD	£.		581	541

## BERMUDA:

SALARIED ESTABLISHMENT

Provided for under Vote No. 6, Dockyards and Naval Yards at Home and Abroad.

## WAGES:

	Number of Men.			
	1877/78.	1876/77.		
M.—For the Wages of Artificers and Labourers, viz.:				
On the Establishment	3	3	338	338
Hired Artificers and Labourers	8	8	406	406
Cooper, borne on the books of H.M.S. "Terror"	1	1	49	49
Extra Pay to ditto under Queen's Regulations	—	—	20	20
	12	12		
TOTAL BERMUDA VICTUALLING YARD	£.		813	813

VOTE 7.—VICTUALLING YARDS AT HOME AND ABROAD—*continued.*

VICTUALLING YARDS ABROAD— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
JAMAICA.		£.	£.
Paymaster in Charge of Naval and Victualling Stores at Port Royal,—borne on the books of H.M.S. "Aboukir,"—Full Pay - - - - -	£. 601		
Civil Allowance to ditto - - - - -	250		
Allowance to ditto in lieu of Provisions - - - - - (Salary of Successor will be reconsidered)	27		
Wages of Servant to ditto,—borne on the books of H.M.S. "Aboukir" £. 20		878	878
Allowance in lieu of Provisions to Servant - - - - -	27		
Clerk, from 90 l. to 300 l. per annum - - - - -	£. 300	47	47
Allowance to ditto, to meet the increased cost of living - - - - -	50		
Temporary Employment of a Writer - - - - -		350	350
		110	86
H.—SALARIES AND ALLOWANCES, VICTUALLING YARDS ABROAD - - - £.		1,385	1,361
Allowance in lieu of Stationery - - - - -		10	10
Travelling Expenses, Advertisements, and other small Expenses - - - - -		6	6
L.—CONTINGENCIES, VICTUALLING YARDS ABROAD - - - - - £.		16	16
TOTAL SALARIED ESTABLISHMENT - - - £.		1,401	1,377
WAGES:			
M.—For the Wages of Artificers and Labourers, viz.:			
On the Establishment - - - - -	6	6	374
Hired Artificers and Labourers - - - - -	2	2	188
TOTAL WAGES - - - - -	8	8	562
TOTAL JAMAICA VICTUALLING YARD - - - £.		1,963	1,939
ASCENSION:			
The duties connected with the Victualling Depot are performed by the Naval Garrison of Ascension, assisted by a Farm Bailiff, Cooper, Store Porter, Kroomen, &c. (see Appendix No. 2, p. 168); the Pay and Special Allowances of the Officers, Seamen, Marines, and others employed, being provided for under Vote No. 1 - - - - -		—	—

VOTE 7.—VICTUALLING YARDS AT HOME AND ABROAD—*continued.*

VICTUALLING YARDS ABROAD— <i>continued.</i>			REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
			£.	£.
SIERRA LEONE:				
H.—Allowance to the Commissariat Officer superintending the Receipt and Issue of Provisions and Stores	- - - - -	- - - - -	100	100
L.—Small Expenses	- - - - -	- - - - -	8	8
TOTAL SALARIED ESTABLISHMENT	- - - - -	£.	108	108
WAGES:				
			Number of Men.	
			1877/78.	1876/77.
M.—For the Wages of Artificers and Labourers:				
On the Establishment	- - - - -	- - - - -	4	4
Hired Artificers and Labourers	- - - - -	- - - - -	1	1
TOTAL WAGES	- - - - -	- - - - -	5	5
TOTAL SIERRA LEONE VICTUALLING YARD	- - - - -	£.	201	201
CAPE OF GOOD HOPE:				
Naval and Victualling Storekeeper (paid as Naval Storekeeper and Accountant)	-	-	—	—
Clerk, from 90 <i>l.</i> to 300 <i>l.</i> per annum	- - - - -	£. 300		
Allowance to ditto, to meet increased cost of living	- - - - -	50		
Allowance to ditto, for House Rent	- - - - -	40		
Temporary Employment of a Writer	- - - - -	£. 110	390	390
Allowance to ditto, to meet increased cost of living	- - - - -	27	137	137
H.—SALARIES AND ALLOWANCES, VICTUALLING YARDS ABROAD	- - - - -	£.	527	527
Allowances in lieu of Stationery	- - - - -	- - - - -	6	6
Travelling Expenses and Contingencies	- - - - -	- - - - -	30	30
L.—CONTINGENCIES, VICTUALLING YARDS ABROAD	- - - - -	£.	36	36
TOTAL SALARIED ESTABLISHMENT	- - - - -	£.	563	563
WAGES:				
			Number of Men.	
			1877/78.	1876/77.
M.—For the Wages of Artificers and Labourers, viz.:				
On the Establishment	- - - - -	- - - - -	3	3
Hired Artificers and Labourers	- - - - -	- - - - -	2	2
Coopers borne on books of H.M.S. "Flora"	- - - - -	- - - - -	2	2
Allowances to ditto in lieu of Provisions and Lodgings, and Extra Pay under Queen's Regulations, and temporary addition to Wages and Extra Pay	- - - - -	- - - - -	—	—
TOTAL WAGES	- - - - -	- - - - -	7	7
TOTAL CAPE OF GOOD HOPE VICTUALLING YARD	- - - - -	£.	1,132	1,100



VOTE 7.—VICTUALLING YARDS AT HOME AND ABROAD—*continued.*VICTUALLING YARDS ABROAD—*continued.*

## SYDNEY:

Paymaster in charge of Naval, Victualling and Medical Stores—(provided for under Vote No. 6).

## BOMBAY.

H.—Allowance to Indian Marine Storekeeper for charge of the Dépôt - - -

M.—For the Wages of Labourers and Contingencies - - -

TOTAL BOMBAY VICTUALLING DEPÔT - - - £.

## BARBADOS:

H.—Allowance to the Commissariat Officer for superintending the Receipt and Issue of Provisions and Stores - - - - - £.

## TRINCOMALIE:

SALARIED ESTABLISHMENT - - - - -

## WAGES:

M.—For the Wages of Artificers and Labourers, viz.:

On the Establishment - - - - -

Hired Artificers and Labourers - - - - -

TOTAL TRINCOMALIE VICTUALLING YARD - - - £.

## HONG KONG:

SALARIED ESTABLISHMENT - - - - -

## WAGES:

M.—For the Wages of Artificers and Labourers, viz.:

On the Establishment - - - - -

Hired Artificers and Labourers - - - - -

TOTAL WAGES - - -

TOTAL HONG KONG VICTUALLING YARD - - - £.

REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
£.	£.
—	—
200	200
206	206
406	406
100	100
72	72
82	82
154	154
510	491
475	490
985	981
985	981

{ Provided for under Vote No. 6, Dock-yards and Naval Yards at Home and Abroad.

{ Provided for under Vote No. 6, Dock-yards and Naval Yards at Home and Abroad.



VOTE 7.—VICTUALLING YARDS AT HOME AND ABROAD—*continued.*

VICTUALLING YARDS ABROAD— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
YOKOHAMA:		£.	£.
SALARIED ESTABLISHMENT:			
Paymaster borne on Books of Her Majesty's Ship "Audacious":			
Full Pay - - - - -	£. 601		
Allowances to meet the increased cost of living on shore, and in lieu of Quarters, Fuel, Lights, and Servants - - - - -	250		
Allowance in lieu of Provisions - - - - -	27		
Extra Pay for performing Naval Accountant's Duties - - - - -	46		
(Salary of Successor will be reconsidered).		924	797
H.—SALARIES AND ALLOWANCES, VICTUALLING YARDS ABROAD - - - - -	£.	924	797
I.—Rent of ground for Depot - - - - -		95	95
Allowance in lieu of Stationery to the Paymaster - - - - -		15	15
Postage, Travelling Charges on the Public Service, and other small Expenses - - - - -		5	10
L.—CONTINGENCIES, VICTUALLING YARDS ABROAD - - - - -	£.	20	25
TOTAL SALARIED ESTABLISHMENT - - - - -	£.	1,039	917
WAGES:			
M.—For the Wages, &c., of 2 Ships' Stewards, a Chinese Cooper, and a Japanese Head Coolie, borne on the Books of Her Majesty's Ship "Audacious" - - - - -		216	188
For Allowances in lieu of Provisions to the above - - - - -		91	91
For Extra Pay to two Ships' Stewards at 1s. 3d. a day each - - - - -		46	46
For the Wages of four Native Watchmen not borne on Ships' Books - - - - -		81	81
TOTAL WAGES - - - - -	£.	434	406
TOTAL YOKOHAMA VICTUALLING YARD - - - - -	£.	1,473	1,323
£.			
TOTAL OF YARDS AT HOME AND ABROAD	77,260		
Abate,— Labour at the several Yards in making and repairing Yard Machinery, chargeable to, and provided for, under Vote No. 11, New Works - - - - -	450		
See page 109.		76,810	76,280
N.—Extra Pay to Seamen, &c., temporarily employed in Victualling Yards at Home and Abroad* - - - - -		120	120
£.		76,930	76,400

\* This Sub-head relates to Officers, Seamen, &c., whose Sea Pay appears under Vote No. 1 only.



VOTE 7.—VICTUALLING YARDS AT HOME AND ABROAD—continued.

A B S T R A C T.

VICTUALLING YARDS.	A.		B.		C.		D.	
	SALARIES AND ALLOWANCES.		RENTS, WATER, &c.		GAS.		CONTINGENCIES.	
	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.
AT HOME:	£.	£.	£.	£.	£.	£.	£.	£.
Royal Victoria Yard - - -	8,225	8,261	360	360	700	700	265	195
Royal Clarence Yard - - -	2,621	2,580	2	2	250	250	114	104
Royal William Yard - - -	3,026	2,885	254	254	120	120	220	200
Haulbowline - - - -	1,084	1,008	2	2	- -	- -	35	35
Abate Labour at Royal Victoria Yard in making and repairing Yard Machinery chargeable to and pro- vided for under Vote No. 11, "New Works, &c." - - - - - } - - £.								
TOTAL of YARDS at HOME - £.	14,906	14,784	618	618	1,070	1,070	634	534
ABROAD :	H.		I.		K.		L.	
Gibraltar - - - - -	- -	- -	- -	- -	- -	- -	- -	- -
Malta - - - - -	1,216	1,176	- -	- -	100	100	35	35
Halifax - - - - -	322	307	20	20	15	15	15	17
Bermuda - - - - -	- -	- -	- -	- -	- -	- -	- -	- -
Jamaica - - - - -	1,385	1,361	- -	- -	- -	- -	16	16
Ascension - - - - -	- -	- -	- -	- -	- -	- -	- -	- -
Sierra Leone - - - -	100	100	- -	- -	- -	- -	8	8
Cape of Good Hope - -	527	527	- -	- -	- -	- -	36	36
Sydney - - - - -	- -	- -	- -	- -	- -	- -	- -	- -
Bombay - - - - -	200	200	- -	- -	- -	- -	- -	- -
Barbados - - - - -	100	100	- -	- -	- -	- -	- -	- -
Trincomalie - - - - -	- -	- -	- -	- -	- -	- -	- -	- -
Hong Kong - - - - -	- -	- -	- -	- -	- -	- -	- -	- -
Esquimalt - - - - -	1,857	1,847	30	30	- -	- -	101	101
Yokohama - - - - -	924	797	95	95	- -	- -	20	25
TOTAL of YARDS ABROAD - £.	6,631	6,415	145	145	115	115	231	238
TOTAL of YARDS at HOME and ABROAD } £.	21,537	21,149	763	763	1,185	1,185	865	772

Mem.—For Statement of the numbers and description of workmen authorised as the establishments at the several Victualling Yards at Home, see Appendix, No. 15 (A. and B.), p. 192.

## VOTE 7.—VICTUALLING YARDS AT HOME AND ABROAD—continued.

## A B S T R A C T.

E.		F.		G.		REQUIRED for the Service of the Year 1877-78.	LAST VOTE for the Financial Year 1876-77.
WAGES TO ARTIFICERS.		WAGES, &c., VICTUALLING YARD HOYS.		WAGES, POLICE FORCE.			
1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.		
£.	£.	£.	£.	£.	£.	£.	£.
20,492	20,497	2,359	2,351	2,214	2,219	34,615	34,588
6,564	6,529	2,140	2,138	1,375	1,380	13,066	12,983
5,975	5,993	1,685	1,684	1,375	1,380	12,655	12,516
1,126	1,393	131	131	267	—	2,595	2,569
34,157	34,412	-	-	-	-	62,931	62,651
450	380	-	-	-	-	450	380
33,707	34,032	6,315	6,304	5,231	4,979	62,481	62,271
M.		—		—			
300	290	-	-	-	-	300	290
2,232	2,198	-	-	-	-	3,583	3,509
209	182	-	-	-	-	581	541
813	813	-	-	-	-	813	813
562	562	-	-	-	-	1,963	1,939
—	—	—	—	—	—	—	—
93	93	-	-	-	-	201	201
569	537	-	-	-	-	1,132	1,100
—	—	—	—	—	—	—	—
206	206	-	-	-	-	406	406
-	-	-	-	-	-	100	100
154	154	-	-	-	-	154	154
985	981	-	-	-	-	985	981
650	674	-	-	-	-	2,638	2,652
434	406	-	-	-	-	1,473	1,323
7,207	7,096	-	-	-	-	14,329	14,009
40,914	41,128	6,315	6,304	5,231	4,979	76,810	76,280
N.—For Extra Pay to Artificers, &c. of the Fleet						120	120
TOTAL						£. 76,930	76,400

Vote 8.

MEDICAL ESTABLISHMENTS AT HOME AND ABROAD.

I. ESTIMATE of the Sum which will be required in the Year ending 31st March 1878, to defray the Expense of MEDICAL ESTABLISHMENTS at HOME and ABROAD.

Sixty-six Thousand One Hundred and Fifty Pounds.

II. SUB-HEADS under which this Vote will be accounted for.

	1877-78.	1876-77.	INCREASE.	DECREASE.
	£.	£.	£.	£.
A.—SALARIES AND ALLOWANCES, MEDICAL ESTABLISHMENTS AT HOME	16,259	16,173	86	—
B.—RENTS, WATER, &c. - - - - - DITTO - - -	971	884	87	—
C.—GAS - - - - - DITTO - - -	1,190	1,190	—	—
D.—CONTINGENCIES - - - - - DITTO - - -	986	834	152	—
E.—WAGES, &c. - - - - - DITTO - - -	14,154	14,211	—	57
F.—WAGES, &c., POLICE FORCE - - - - - DITTO - - -	2,315	2,321	—	6
G.—SALARIES AND ALLOWANCES, MEDICAL ESTABLISHMENTS ABROAD	11,530	11,486	44	—
H.—RENTS, WATER, &c. - - - - - DITTO - - -	267	265	2	—
I.—GAS - - - - - DITTO - - -	420	420	—	—
K.—CONTINGENCIES - - - - - DITTO - - -	492	475	17	—
L.—WAGES, &c. - - - - - DITTO - - -	6,488	6,435	53	—
M.—WAGES, &c., POLICE FORCE - - - - - DITTO - - -	310	310	—	—
N.—SALARIES AND ALLOWANCES, MARINE INFIRMARIES - - - -	6,817	6,786	31	—
O.—RENTS, WATER, &c. - - - - - DITTO - - -	49	52	—	3
P.—GAS - - - - - DITTO - - -	90	90	—	—
Q.—CONTINGENCIES - - - - - DITTO - - -	336	351	—	15
R.—WAGES, &c. - - - - - DITTO - - -	2,848	2,867	—	19
S.—WAGES, &c., POLICE FORCE - - - - - DITTO - - -	428	430	—	2
T.—EXTRA PAY TO OFFICERS, SEAMEN AND MARINES EMPLOYED IN MEDICAL ESTABLISHMENTS AT HOME AND ABROAD - - -	200	250	—	50
TOTAL - - - £.	66,150	65,830	472	152

Actual Expenditure for 1875-76. £. 65,194.

NET INCREASE - - - £. 320.



VOTE 8.—MEDICAL ESTABLISHMENTS AT HOME AND ABROAD—*continued.*

## III. DETAILS of the foregoing.

## MEDICAL ESTABLISHMENTS AT HOME.

## HASLAR HOSPITAL.

## SALARIED ESTABLISHMENT:

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
	£.	£.
*Inspector General of Hospitals - - - - -	912	912
*Two Deputy Inspectors General of Hospitals - - - - -	1,387	1,387
*Agent and Steward, 315 l. to 450 l. a year - - - - -	450	450
*Fleet Surgeon - - - - -	531	513
*Chaplain - - - - - Full Pay, £. 401		
Allowance as Naval Instructor - - - - - 73		
Civil Allowance - - - - - 26		
	500	500
*Four Surgeons - - - - -	1,055	1,023
Allowances to Medical Officers in lieu of Provisions for themselves and Servants, and for Fuel and Light - - - - -	428	428
*Curator of the Museum - - - - -	200	200
*Four Dispensers - - - - - £. 456		
<i>One ditto, for six months' additional</i> - - - - -		
Allowances to three, and one additional for six months of the above, in lieu of Fuel and Light, and to one Dispenser for charge of Stores - - - - - 73		
	529	579
Clerks:		
2 Clerks, from 90 l. to 300 l. per annum - - - - - £. 600 (One provided with a Residence.)		
<i>Add</i> ,—Amount required for temporary employment of Civil Service Writers 156		
	756	756
<i>Note.</i> —There are also Surgeons borne on the Books of Her Majesty's Ship "Duke of Wellington," in receipt of Sea Pay and Allowances, whose services are available for the Hospital, pending appointment to Seagoing Ships.		
Compensation to Officers occupying Official Residences for payment of House Duty	7	9
A.—SALARIES and ALLOWANCES, MEDICAL ESTABLISHMENTS AT HOME - - £.	6,755	6,757
Toll for Bridge from Gosport to Haslar (per Act 4 Will. 4, c. 4, s. 49) - - -	50	50
Tithes - - - - -	25	23
B.—RENTS, WATER, &c., MEDICAL ESTABLISHMENTS AT HOME - - £.	75	78
C.—Lighting the Hospital with Gas - - - - - £.	590	570
Carried forward - - - £.	7,420	7,405

\* In occupation of an Official Residence or Quarters.

VOTE 8.—MEDICAL ESTABLISHMENTS AT HOME AND ABROAD—*continued.*

MEDICAL ESTABLISHMENTS AT HOME— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
HASLAR HOSPITAL— <i>continued.</i>			
SALARIED ESTABLISHMENT— <i>continued.</i>		£.	£.
Brought forward - - -		7,420	7,405
Allowances in lieu of Stationery - - - - -		30	30
Funerals, and Compensation for Burial Fees - - - - -		185	170
Postage, Advertisements, Chapel Allowances, Carting Rubbish, and other small Expenses - - - - -		158	125
D.—CONTINGENCIES, MEDICAL ESTABLISHMENTS AT HOME - - - - - £.		373	325
TOTAL SALARIED ESTABLISHMENT - - - £.		7,793	7,730
WAGES :			
E.—For the Wages of Matron, Porter, Barber, Cooks, Labourers, Nurses, Washers, &c., on the Established and Hired Lists, and Clothing for Nurses - - - - -		6,267	6,261
F.—For Wages of the Metropolitan Police Force employed in the Hospital, under Act 23 & 24 Vict. c. 135 (including Commutation for Clothing, Fuel, and Contingent Expenses, for Inspectors, at 9 <i>l.</i> 13 <i>s.</i> 3 <i>d.</i> , for Serjeants, at 7 <i>l.</i> 9 <i>s.</i> 3 <i>d.</i> , and Constables, at 7 <i>l.</i> 9 <i>s.</i> 3 <i>d.</i> per man per annum; and for General Superintendence, at 1 <i>l.</i> 2 <i>s.</i> 10 <i>d.</i> per man per annum), viz. :—			
1 Inspector - - - - -	£.		
3 Serjeants - - - - -	172		
10 Constables - - - - -	302		
	820		
14		1,294	1,297
TOTAL WAGES - - - £.		7,561	7,558
TOTAL HASLAR HOSPITAL - - - £.		15,354	15,288
PLYMOUTH HOSPITAL:			
SALARIED ESTABLISHMENT:			
*Inspector General of Hospitals - - - - -		912	912
*Deputy Inspector General of Hospitals - - - - -		693	693
*Agent and Steward from 315 <i>l.</i> to 450 <i>l.</i> a year - - - - -		450	438
*Fleet Surgeon - - - - -		547	547
*Chaplain - - - - - Full Pay, £. 310			
Civil Allowance to ditto - - - - -	100		
Allowance to make up former Pay - - - - -	49		
*Four Surgeons - - - - -		459	393
		940	942
Allowances to Medical Officers in lieu of Provisions for themselves and Servants, and for Fuel and Light - - - - -		361	361
*Three Dispensers - - - - -		367	376
Allowances to ditto, in lieu of Fuel and Light, and to one Dispenser for charge of Stores - - - - -		64	64
Carried forward - - - £.		4,793	4,726

\* In occupation of an Official Residence or Quarters.

## VOTE 8.—MEDICAL ESTABLISHMENTS AT HOME AND ABROAD—continued.

## MEDICAL ESTABLISHMENTS AT HOME—continued.

## PLYMOUTH HOSPITAL—continued.

## SALARIED ESTABLISHMENT—continued.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
<b>PLMOUTH HOSPITAL—continued.</b>		
<b>SALARIED ESTABLISHMENT—continued.</b>		
Brought forward - - -	£. 4,793	£. 4,726
Clerks: - - -		
*1 Clerk from 90 l. to 300 l. per annum - - -	300	
1 Writer, from 80 l. to 160 l. per annum - - -	110	
Add,—Amount required for Salary of a Clerk* provisionally employed in lieu of a Writer - - -	240	
	650	630
<i>Note.</i> —There are also Surgeons borne on the Books of Her Majesty's Ship "Royal Adelaide," in receipt of Sea Pay and Allowances, whose services are available for the Hospital, pending appointment to Seagoing Ships.		
Compensation to Officers occupying Official Residences for payment of House Duty - - -	5	5
A.—SALARIES and ALLOWANCES, MEDICAL ESTABLISHMENTS AT HOME - - -	£. 5,448	£. 5,361
Rent of Ground near the Hospital (3 l.), Tithes (7 l.) - - -	10	10
Water supplied to the Hospital - - -	300	210
B.—RENTS, WATER, &c., MEDICAL ESTABLISHMENTS AT HOME - - -	£. 310	£. 220
C.—Lighting the Hospital with Gas - - -	£. 300	£. 320
Allowances in lieu of Stationery - - -	28	28
Funerals, and Compensation for Burial Fees - - -	90	45
Postage, Advertisements, Chapel Allowances, and other small Expenses - - -	110	110
D.—CONTINGENCIES, MEDICAL ESTABLISHMENTS AT HOME - - -	£. 228	£. 183
TOTAL SALARIED ESTABLISHMENT - - -	£. 6,286	£. 6,084
WAGES:		
E.—For the Wages of Matron, Porter, Barber, Cooks, Labourers, Nurses, Washers, &c., on the Established and Hired Lists, and Clothing for Nurses - - -	4,894	4,994
F.—For Wages of the Metropolitan Police Force employed in the Hospital, under Act 23 & 24 Vict. c. 135 (including Commutation for Clothing, Fuel, and Contingent Expenses, for Serjeants and Constables, at 7 l. 9 s. 3 d. per man per annum; and for General Superintendence, at 1 l. 2 s. 10 d. per man per annum), viz:—		
2 Serjeants - - -	201	
10 Constables - - -	820	
12 - - -	1,021	1,024
TOTAL WAGES - - -	£. 5,915	£. 6,018
TOTAL PLYMOUTH HOSPITAL - - -	£. 12,201	£. 12,102

\* In occupation of an Official Residence or Quarters.



VOTE 8.—MEDICAL ESTABLISHMENTS AT HOME AND ABROAD—continued.

MEDICAL ESTABLISHMENTS AT HOME—continued.	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
	£.	£.
HAULBOWLINE HOSPITAL:		
SALARIED ESTABLISHMENT:		
*Fleet Surgeon - - - - -	452	434
*Surgeon - - - - -	256	247
Allowances to Medical Officers in lieu of Provisions for themselves and Servants, and for Fuel and Light - - - - -	92	92
*Dispenser - - - - - £. 119		
Allowance to ditto in lieu of Fuel and Light, and for charge of Stores - 27	146	141
A.—SALARIES and ALLOWANCES, MEDICAL ESTABLISHMENTS AT HOME - £.	946	914
D.—Postage, Advertisements, Travelling Charges, and other small Expenses -	20	10
TOTAL SALARIED ESTABLISHMENT - - - £.	966	924
WAGES:		
E.—For the Wages of Steward,* Porter, Cook, Labourers, Nurses, Washers, &c., on the Established and Hired Lists, and Clothing for Nurses - - - - -	681	673
TOTAL HAULBOWLINE HOSPITAL - - - £.	1,647	1,597
YARMOUTH HOSPITAL:		
(Lunatic Asylum.)		
SALARIED ESTABLISHMENT:		
* Inspector General of Hospitals - - - - -	912	912
*Assisting Fleet Surgeon - - - - -	547	547
Allowances to Medical Officers in lieu of Provisions for themselves and Servants, and for Fuel and Light - - - - -	138	138
*Clerk, from 90 l. to 300 l. per annum - - - - -	285	270
Temporary Employment of a Writer - - - - -	78	78
Carried forward - - - £.	1,960	1,945

\* In occupation of an Official Residence or Quarters.

VOTE 8.—MEDICAL ESTABLISHMENTS AT HOME AND ABROAD—*continued.*

MEDICAL ESTABLISHMENT AT HOME— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
YARMOUTH HOSPITAL— <i>continued.</i>		£.	£.
SALARIED ESTABLISHMENT— <i>continued</i>			
Brought forward - - -		1,960	1,945
*Dispenser - - - - -	£. 119		
Allowance to ditto for charge of Stores, and in lieu of Fuel and Light -	27	146	119
Compensation to Officers occupying Official Residences for Payment of House Duty		3	3
A.—SALARIES and ALLOWANCES, MEDICAL ESTABLISHMENTS AT HOME - £.		2,109	2,067
Ground Rent of Hospital - - - - -			
Rent of Cemetery - - - - -			
Ditto of Ground occupied by Boat-house - - - - -			
Water supplied for the Hospital - - - - -		26	26
B.—RENTS, WATER, &c., MEDICAL ESTABLISHMENTS AT HOME - - - £.		360	360
C.—Lighting the Hospital with Gas - - - - - £.		386	386
Funerals, and Compensation for Burial Fees - - - - -		300	300
Postage, Advertisements, Contingent Expenses in conducting, and for amusement of Lunatics, regulating Clock, and other small Expenses - - - - -		100	90
D.—CONTINGENCIES, MEDICAL ESTABLISHMENTS AT HOME - £.		170	140
TOTAL SALARIED ESTABLISHMENT - - - £.		270	230
WAGES:			
E.—For the Wages of Porter, Butler, Cook, Labourers, Attendants, Washers, &c., on the Established and Hired Lists, and Clothing for Attendants - - - - -		2,025	1,996
TOTAL YARMOUTH HOSPITAL - - - £.		5,090	4,979

\* In occupation of an Official Residence or Quarters.

VOTE 8.—MEDICAL ESTABLISHMENTS AT HOME AND ABROAD—*continued.*

MEDICAL ESTABLISHMENTS AT HOME— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
PORTLAND HOSPITAL:		£.	£.
SALARIED ESTABLISHMENT:			
* Staff Surgeon (in lieu of a Surgeon) borne in Her Majesty's Ship "Boscawen"—Full Pay -	£. 401		
Allowance to ditto in lieu of Provisions for himself and Servants, and for Fuel and Light - - - - -	53	454	436
A.—SALARIES AND ALLOWANCES, MEDICAL ESTABLISHMENTS AT HOME - - -	£.	454	436
D.—Washing and other Contingencies - - - - -		75	66
TOTAL SALARIED ESTABLISHMENT - - - - -	£.	529	502
WAGES:			
E.—For the Wages of a Sick Berth Steward and a Sick Berth Attendant, borne in Her Majesty's Ship "Boscawen" - - - - -	£. 76		
Allowance to Sick Berth Steward - - - - -	5	81	81
For Wages, &c. of a hired Cook not borne on Ship's Books - - - - -		42	42
TOTAL WAGES - - - - -	£.	123	123
TOTAL PORTLAND MEDICAL ESTABLISHMENT - - - - -	£.	652	625
DARTMOUTH HOSPITAL;			
(FOR CADETS.)			
Fleet Surgeon borne in Her Majesty's Ship "Britannia"—Full Pay -	£. 456		
Allowance to ditto in lieu of Provisions - - - - -	27		
Lodging Allowance to ditto - - - - -	64	547	638
A.—SALARIES AND ALLOWANCES, MEDICAL ESTABLISHMENTS AT HOME - - -	£.	547	638
B.—Rent of Hospital - - - - -		200	200
D.—Washing and other Contingencies - - - - -		20	20
TOTAL SALARIED ESTABLISHMENT - - - - -	£.	767	858
E.—For the Wages of a Sick Berth Steward borne in Her Majesty's Ship "Britannia" - - - - -	£. 44		
Allowance to ditto in lieu of Provisions - - - - -	27	71	71
For Wages, &c. of a hired Cook and Nurses not borne on Ship's Books -		93	93
TOTAL WAGES - - - - -	£.	164	164
TOTAL DARTMOUTH HOSPITAL - - - - -	£.	931	1,022

\* In occupation of an Official Residence or Quarters.



## VOTE 8.—MEDICAL ESTABLISHMENTS AT HOME AND ABROAD—continued.

## MEDICAL ESTABLISHMENTS ABROAD.\*

## MALTA:

## SALARIED ESTABLISHMENT:

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
	£.	£.
Deputy Inspector General of Hospitals - - - - -	693	693
Two Surgeons - - - - -	500	538
Allowances to Medical Officers in lieu of Provisions for themselves and Servants, and for Fuel and Light - - - - -	328	328
Clerk, from 90 £. to 300 £. per annum - - - - -	300	300
Dispenser - - - - - £. 91		
Allowance to ditto to meet increased cost of living - - - - - 37		
Allowance to ditto for charge of Stores, and in lieu of Fuel and Light 27		
	155	155
G.—SALARIES and ALLOWANCES, MEDICAL ESTABLISHMENTS ABROAD - £.	1,976	2,014
H.—Beneficiary Charge on Ground occupied by Hospital - - - - -	2	2
I.—Lighting the Hospital with Gas - - - - -	150	150
Allowances in lieu of Stationery - - - - -	7	7
Postage, Boat Hire, Funerals, and other small Expenses - - - - -	50	40
K.—CONTINGENCIES, MEDICAL ESTABLISHMENTS ABROAD - £.	57	47
TOTAL SALARIED ESTABLISHMENT - - - £.	2,185	2,213

## WAGES:

L.—For the Wages of Matron, Butler, Cook, Barber, Labourers, Nurses, &c., on the Established and Hired Lists and for Clothing for Nurses - - - - -	1,320	1,320
M.—For the Wages, &c., of Police Force employed in the Hospital - - - - -	310	310
TOTAL WAGES - - - £.	1,630	1,630

TOTAL MALTA MEDICAL ESTABLISHMENT* - - - £.	3,815	3,843
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## LISBON HOSPITAL:

## SALARIED ESTABLISHMENT:

	£.	
Fleet Surgeon (in lieu of a Staff Surgeon), borne in Her Majesty's Ship "Duke of Wellington"—Full Pay - - - - -	547	
Allowance to ditto in lieu of Provisions for himself and Servants, and for Fuel and Light - - - - -	112	
	659	659
G.—SALARIES and ALLOWANCES, MEDICAL ESTABLISHMENTS ABROAD - £.	659	659
Water - - - - -	30	30
Quit Rent and Fire Insurance - - - - -	13	13
H.—RENTS, WATER, &c., MEDICAL ESTABLISHMENTS ABROAD - £.	43	43
I.—Lighting the Hospital with Gas - - - - -	20	20
K.—Washing, Funerals, and other Contingencies - - - - -	60	75
TOTAL SALARIED ESTABLISHMENT - - - £.	782	797

## WAGES:

L.—For the Wages of a Sick Berth Steward and a Sick Berth Attendant borne in Her Majesty's Ship "Duke of Wellington" - - - - -	76	76
For Extra Pay, &c., to the above - - - - -	53	53
For Wages of a Cook and Servants on Established and Hired Lists - - - - -	97	97
TOTAL WAGES - - - £.	226	226
TOTAL LISBON MEDICAL ESTABLISHMENT - - - £.	1,008	1,023

\* Note.—Salaried Officers and Clerks at the Establishments Abroad are generally in occupation of Official Residences or Quarters, or in receipt of Allowances in lieu.

VOTE 8.—MEDICAL ESTABLISHMENTS AT HOME AND ABROAD—*continued.*

MEDICAL ESTABLISHMENTS ABROAD— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
		£.	£.
HALIFAX HOSPITAL:			
SALARIED ESTABLISHMENT:			
Professional Duties performed by Medical Officers of the Fleet.			
I.—Lighting the Hospital with Gas	£. 50	50	50
K.—Stationery Allowance, Washing, and Contingencies	13	13	13
TOTAL SALARIED ESTABLISHMENT	£. 63	63	63
WAGES:			
L.—For the Wages of a Sick Berth Steward borne in Her Majesty's Ship "Bellerophon"	£. 44		
For Allowance to ditto in lieu of Provisions	27		
For Extra Pay to ditto	18		
	89	89	89
For Wages to Watchman and Labourers on Established and Hired Lists	78	78	78
TOTAL WAGES	£. 167	167	167
TOTAL HALIFAX MEDICAL ESTABLISHMENT	£. 230	230	230
BERMUDA:			
SALARIED ESTABLISHMENT:			
Deputy Inspector General of Hospitals	698	688	688
Two Surgeons	566	566	566
Allowances to Medical Officers in lieu of Provisions for themselves and Servants, and for Fuel and Light	328	328	328
Clerk, from 90 l. to 300 l. per annum	£. 300		
Allowance to ditto, to meet increased cost of living	50		
	350	350	350
Dispenser	91		
Allowance to ditto, to meet increased cost of living	55		
Allowance to ditto, for charge of Stores, and in lieu of Fuel and Light	27		
	173	173	173
G.—SALARIES and ALLOWANCES, MEDICAL ESTABLISHMENTS ABROAD	£. 2,110	2,105	2,105
Allowances in lieu of Stationery	7	7	7
Travelling Charges, Funerals, and other small Expenses	9	10	10
K.—CONTINGENCIES, MEDICAL ESTABLISHMENTS ABROAD	£. 16	17	17
TOTAL SALARIED ESTABLISHMENT (Carried forward)	£. 2,126	2,122	2,122

VOTE 8.—MEDICAL ESTABLISHMENTS AT HOME AND ABROAD—*continued.*MEDICAL ESTABLISHMENTS ABROAD—*continued*BERMUDA—*continued.*

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
	£.	£.
Brought forward - - -	2,126	2,122
WAGES :		
L.—For the Wages of Matron, Porter, Butler, Cook, Labourers, Nurses, Washers, &c., on the Established and Hired Lists - - - - -	1,014	1,014
TOTAL BERMUDA MEDICAL ESTABLISHMENT - - £.	3,140	3,136

## JAMAICA :

## SALARIED ESTABLISHMENT :

Deputy Inspector General of Hospitals - - - - -	627	608
Two Surgeons - - - - -	484	511
Allowances to Medical Officers in lieu of Provisions for themselves and Servants, and for Fuel and Light - - - - -	328	328
Writer, from 80 £. to 160 £. per annum - - - - - £. 90 (Employed in lieu of a Clerk.)		
Allowance to ditto, to meet increased cost of living - - - - - 100	190	205
Dispenser - - - - - £. 91		
Allowance to ditto, to meet increased cost of living - - - - - 55		
Allowance to ditto, for charge of Stores, and in lieu of Fuel and Light - - - - - 9	155	155
G.—SALARIES and ALLOWANCES, MEDICAL ESTABLISHMENTS ABROAD - - £.	1,784	1,807
H.—Expenses incurred at the Naval Yard in supplying the Hospital with Water -	46	46
Allowances in lieu of Stationery - - - - -	7	7
Travelling Charges, Boat Hire, Advertisements, Funerals, and other small Expenses	6	5
K.—CONTINGENCIES, MEDICAL ESTABLISHMENTS ABROAD - - - - - £.	13	12
TOTAL SALARIED ESTABLISHMENT - - - £.	1,843	1,865

## WAGES :

L.—For the Wages of Matron, Porter, Butler, Cook, Boatmen, Labourers, Nurses, Washers, &c., on the Established and Hired Lists - - - - -	806	777
TOTAL JAMAICA MEDICAL ESTABLISHMENT - - - £.	2,649	2,642

## ASCENSION :

The duties connected with the Hospital are performed by the Naval Garrison of Ascension, assisted by a Dispenser, Hospital Clerk, &c. (See Appendix No. 2, page 168); the Pay and Special Allowances of the Officers, Seamen, Marines, and others employed, being provided for under Vote No. 1 - - - - -



VOTE 8.—MEDICAL ESTABLISHMENTS AT HOME AND ABROAD—*continued.*

MEDICAL ESTABLISHMENTS ABROAD— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
		£.	£.
CAPE OF GOOD HOPE:			
SALARIED ESTABLISHMENT:			
Fleet Surgeon - - - - -		526	545
Surgeon - - - - -		256	254
Allowances to Medical Officers in lieu of Provisions for themselves and Servants, and for Fuel and Light - - - - -		220	220
Clerk, from 90 l. to 300 l. per annum - - - - -	£. 262		
Allowance to ditto, to meet increased cost of living - - - - -	50		
		312	297
Dispenser - - - - -	£. 91		
Allowance to ditto, to meet increased cost of living - - - - -	37		
Allowance to ditto, for charge of Stores, and in lieu of Fuel and Light - - - - -	27		
Allowance to ditto, for House Rent - - - - -	35		
		190	190
G.—SALARIES and ALLOWANCES, MEDICAL ESTABLISHMENTS ABROAD - - - - -		£. 1,504	1,506
Allowance in lieu of Stationery - - - - -		6	6
Funerals, and other small Expenses - - - - -		5	3
K.—CONTINGENCIES, MEDICAL ESTABLISHMENT ABROAD - - - - -		£. 11	9
TOTAL SALARIED ESTABLISHMENT - - - - -		£. 1,515	1,515
WAGES:			
L.—For the Wages of Butler, Cook, Washers, &c., on the Established and Hired- Lists - - - - -		301	302
For ditto, of one Serjeant and five Marines, borne in Her Majesty's Ship "Flora," for duty as Hospital Nurses - - - - -		146	146
Extra Pay to-ditto - - - - -		110	110
TOTAL WAGES - - - - -		£. 557	558
TOTAL CAPE OF GOOD HOPE MEDICAL ESTABLISHMENT - - - - -		£. 2,072	2,073
TRINCOMALIE:			
SALARIED ESTABLISHMENT:			
Professional Duties performed by Medical Officers of the Fleet.			
K.—Stationery Allowance and Contingencies - - - - -		20	20
WAGES:			
L.—For Wages of Peon, Dispensary man, Cook, and Coolies employed as Labourers, &c., on the Established and Hired Lists - - - - -	£.	161	161
TOTAL TRINCOMALIE HOSPITAL - - - - -		£. 181	181

## VOTE 8.—MEDICAL ESTABLISHMENTS AT HOME AND ABROAD—continued.

## MEDICAL ESTABLISHMENTS ABROAD—continued.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
<b>HONG KONG:</b>	£.	£.
<b>SALARIED ESTABLISHMENT:</b>		
Deputy Inspector General of Hospitals - - - - -	693	608
Two Surgeons - - - - -	510	538
Allowances to Medical Officers in lieu of Provisions for themselves and Servants, and for Fuel and Light - - - - -	328	328
Clerk, from 90 l. to 300 l. per annum - - - - - £. 181		
Allowance to ditto, to meet increased cost of living - - - - - 100		
House Allowance to ditto - - - - - 150		
	381	371
Dispenser - - - - - £. 183		
Allowance to ditto, to meet increased cost of living - - - - - 73		
Allowance to ditto, for charge of Stores, and for Fuel and Light - - - - - 27		
	283	276
<b>G.—SALARIES and ALLOWANCES, MEDICAL ESTABLISHMENTS ABROAD - - £.</b>	2,195	2,121
<b>H.—Rents, &amp;c. (License for Land at Wanchai) - - - - -</b>	2	—
<b>I.—Lighting the Hospital with Gas - - - - -</b>	200	200
Allowances in lieu of Stationery - - - - - 15		15
Funeral Expenses, Boat Hire, Washing Linen, and other small Expenses - - - - - 140		140
<b>K.—CONTINGENCIES, MEDICAL ESTABLISHMENTS ABROAD - - - £.</b>	155	155
<b>TOTAL SALARIED ESTABLISHMENT - - - £.</b>	2,552	2,476
<b>WAGES:</b>		
<b>L.—For the Wages of Steward, Wardmaster, Cooks, Labourers, Watchmen, Nurses, &amp;c., on Established and Hired Lists - - - - -</b>	1,054	1,054
<b>TOTAL HONG KONG MEDICAL ESTABLISHMENT - - - £.</b>	3,606	3,530
<b>ESQUIMALT HOSPITAL:</b>		
<b>SALARIED ESTABLISHMENT:</b>		
Staff Surgeon, in lieu of a Surgeon, borne on the books of H.M.S. "Repulse"—Full Pay - - - - - £. 365		
Allowance to ditto in lieu of Provisions for himself and Servants, and for Fuel and Light - - - - - 112		
Allowance to ditto for charge of Stores - - - - - 20		
	497	497
<b>G.—SALARIES and ALLOWANCES, MEDICAL ESTABLISHMENTS ABROAD - - - £.</b>	497	497
<b>K.—For Stationery Allowance (5 l.), Washing Hospital Linen, and other Con- tingencies - - - - -</b>	70	50
<b>TOTAL SALARIED ESTABLISHMENT (Carried forward) - - - £.</b>	567	547

VOTE 8.—MEDICAL ESTABLISHMENTS AT HOME AND ABROAD—*continued.*

MEDICAL ESTABLISHMENTS ABROAD— <i>continued.</i>		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
ESQUIMAULT HOSPITAL— <i>continued.</i>		£.	£.
Brought forward - - -		567	547
WAGES:			
L.—For Wages of a Sick Berth Steward borne on the books of H.M.S. "Repulse" - - - - - £. 44			
For Extra Pay to Sick Berth Steward - - - - -	102	146	146
For Wages of hired Nurse and Cook not borne on Ship's Books - - - -		164	164
TOTAL WAGES - - - - £.		310	310
TOTAL ESQUIMAULT MEDICAL ESTABLISHMENT - - - - £.		877	857
YOKOHAMA HOSPITAL:			
SALARIED ESTABLISHMENT:			
Staff Surgeon, borne on the books of H.M.S. "Audacious"— - - Full Pay		329	329
Surgeon - - - ditto - - - ditto - - - Full Pay		256	228
Allowances to Medical Officers in lieu of Provisions for themselves and Servants, and for Fuel and Light - - - - -		220	220
G.—SALARIES AND ALLOWANCES, MEDICAL ESTABLISHMENTS ABROAD - - - £.		805	777
Rent of Land for Hospital - - - - -		174	174
H.—RENTS, WATER, &c., MEDICAL ESTABLISHMENTS ABROAD - - - - £.		174	174
Allowance in lieu of Stationery to the Surgeon - - - - -		2	2
Washing, Funeral Expenses, and other Contingencies - - - - -		75	75
K.—CONTINGENCIES, MEDICAL ESTABLISHMENTS ABROAD - - - £.		77	77
TOTAL SALARIED ESTABLISHMENT - - - - £.		1,056	1,028
WAGES:			
L.—For the Wages of a Sick Berth Steward, a Sick Berth Attendant, an Assistan Sick Berth Attendant, a Ward Room Officers' Servant, and five Marines, borne on the books of H.M.S. "Audacious" for Hospital Service at Yokohama -		245	245
For Allowances to ditto in lieu of Provisions - - - - -		246	246
For Extra Pay to some of the above - - - - -		205	183
For Wages of Coolies, &c., employed as hired Watchmen, Cooks, and Labourers		177	174
TOTAL WAGES - - - - £.		873	848
TOTAL YOKOHAMA MEDICAL ESTABLISHMENT - - - - £.		1,929	1,876



VOTE 8.—MEDICAL ESTABLISHMENTS AT HOME AND ABROAD—*continued.*

## MARINE INFIRMARIES.

## CHATHAM:

## SALARIED ESTABLISHMENT:

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
	£.	£.
*Deputy Inspector General of Hospitals - - - - -	626	693
*Staff Surgeon, borne on the Books of H.M.S. "Pembroke"—Full Pay - - -	401	401
*Two Surgeons - - - - -	557	587
Allowances to Medical Officers in lieu of Provisions for themselves and Servants, and for Fuel and Light - - - - -	198	198
*Purveyor (in addition to pay as Divisional Paymaster, and Half Pay, R.M.) -	50	50
Chaplain - - - - - £. 100		
Allowance to ditto, for House Rent - - - - - 60	160	160
*Clerk to Hospital Depôt for Stores - - - - -	100	100
Temporary employment of a Writer - - - - -	78	78
*Dispenser - - - - - £. 101		
Allowance to ditto, for charge of Stores, and for Fuel and Light - 27	128	128
N.—SALARIES and ALLOWANCES, MARINE INFIRMARIES - - - £.	2,298	2,395
O.—Water - - - - -	30	30
P.—Lighting the Infirmary with Gas - - - - -	90	90
Q.—Shaving, Funerals, and other small Expenses - - - - -	100	115
TOTAL SALARIED ESTABLISHMENT - - - £.	2,518	2,630

## WAGES:

R.—For the Wages of Matron, Butler, Cook, Labourers, Washers, &c., on the Es- tablished and Hired Lists, Clothing for Nurses, and Allowances to Infirmary Serjeant, &c. - - - - -	1,899	1,929
S.—For Wages of the Metropolitan Police Force employed in the Infirmary, under Act 23 & 24 Vict. c. 135 (including Commutation for Clothing, Fuel, and Contingent Expenses, for Serjeants and for Constables at 7 l. 9 s. 3 d., per man per annum, and for General Superintendence, at 1 l. 2 s. 10 d. per man per annum), viz.: <div> <div>1 Serjeant - - - - - £. 100</div> <div>4 Constables - - - - - 328</div> <div>5 - - - - -</div> </div>	428	430
TOTAL WAGES - - - £.	2,327	2,359
TOTAL CHATHAM MARINE INFIRMARY - - - £.	4,845	4,989

\* In occupation of an Official Residence or Quarters.

## VOTE 8.—MEDICAL ESTABLISHMENTS AT HOME AND ABROAD—continued.

## MARINE INFIRMARIES—continued.

## PORTSMOUTH (FORTON):

## SALARIED ESTABLISHMENT:

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
	£.	£.
Fleet Surgeon - - - - -	£. 477	
House Allowance to ditto - - - - -	70	
	547	458
*Two Surgeons - - - - -	483	483
Allowances to Medical Officers in lieu of Provisions for themselves and Servants, and for Fuel and Light - - - - -	131	131
N.—SALARIES and ALLOWANCES, MARINE INFIRMARIES - - - £.	1,161	1,072
Q.—Shaving, Washing, Funerals, and other small Expenses - - - - -	6	6
TOTAL SALARIED ESTABLISHMENT - - - £.	1,167	1,078

## WAGES:

R.—For Allowances to Infirmary Serjeant and Dispensary Man - - - - -	58	58
TOTAL PORTSMOUTH MARINE INFIRMARY (FORTON) - - - £.	1,225	1,136

PORTSMOUTH MARINE ARTILLERY INFIRMARY (EASTNEY,  
LATE FORT CUMBERLAND):

## SALARIED ESTABLISHMENT:

*Fleet Surgeon - - - - -	547	547
*Two Surgeons - - - - -	538	514
Allowances to Medical Officers in lieu of Provisions for themselves and Servants, and for Fuel and Light - - - - -	131	131
N.—SALARIES and ALLOWANCES, MARINE INFIRMARIES - - - £.	1,216	1,192
Rent of House for Reception of Infectious Cases (including Water and other Rates on ditto) - - - - -	19	22
O.—RENTS, WATER, &c., MARINE INFIRMARIES - - - £.	19	22
Q.—Shaving, Washing, Funerals, and other small Expenses - - - - -	90	90
TOTAL SALARIED ESTABLISHMENT (Carried forward) - - - £.	1,325	1,304

\* In occupation of an Official Residence or Quarters.

VOTE 8.—MEDICAL ESTABLISHMENTS AT HOME AND ABROAD—*continued.*MARINE INFIRMARIES—*continued.*PORTSMOUTH MARINE ARTILLERY INFIRMARY—*continued.*

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
£.	£.	
Brought forward - - -	1,325	1,304
WAGES:		
R.—For the Wages of Matron and Nurses, on the Established and Hired Lists, for Clothing for Nurses, and Allowances to Infirmary Serjeants, &c. -	316	325
TOTAL PORTSMOUTH MARINE ARTILLERY INFIRMARY - - - £.	1,641	1,629

## PLYMOUTH:

## SALARIED ESTABLISHMENT:

* Fleet Surgeon - - - - -	542	524
* Two Surgeons - - - - -	501	549
Allowances to Medical Officers in lieu of Provisions for themselves and Servants, and for Fuel and Light - - - - -	131	131
N.—SALARIES and ALLOWANCES, MARINE INFIRMARIES - - - £.	1,174	1,204
Q.—Washing, Shaving, Funerals, and other small Expenses - - - - -	1	1
TOTAL SALARIED ESTABLISHMENT - - - £.	1,175	1,205

## WAGES:

R.—For Allowances to Infirmary Serjeant and Corporal - - - - -	58	58
TOTAL PLYMOUTH MARINE INFIRMARY - - - £.	1,233	1,263

## WALMER:

## SALARIED ESTABLISHMENT:

* Fleet Surgeon - - - - -	548	548
* Staff Surgeon (in lieu of } Borne on the books of Her Majesty's Ship "Duncan" { a Surgeon) - - - - - } —Full Pay - - - - - {	328	283
Allowances to Medical Officers in lieu of Provisions for themselves and Servants, and for Fuel and Light - - - - -	92	92
N.—SALARIES and ALLOWANCES, MARINE INFIRMARIES - - - £.	968	923
Q.—Washing, Shaving, Postage, Funerals, and other small Expenses - - - - -	139	139
TOTAL SALARIED ESTABLISHMENT - - - £.	1,107	1,062

## WAGES:

R.—For the Wages of Nurses and Sempstress on Established and Hired Lists, for Clothing for Nurses, and Allowances to Infirmary Serjeants, &c. -	517	497
TOTAL WALMER MARINE INFIRMARY - - - £.	1,624	1,559

T.—Extra Pay to Officers, Seamen and Marines, employed temporarily in Medical Establishments at Home and Abroad, including additional Subsistence Allow- ance to Surgeons, &c., whose services are lent from Her Majesty's Ships -	200	250
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\* In occupation of an Official Residence or Quarters.

Note.—The Wages Staff of each Marine Infirmary includes some Marines borne on the strength of their Division for Pay, their Hospital Allowances only being provided for under Vote No. 8.



## VOTE 8.—MEDICAL ESTABLISHMENTS

## ABSTRACT.

ESTABLISHMENT.	A.		B.		C.	
	SALARIES AND ALLOWANCES.		RENTS, WATER, &c.		GAS.	
	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.
	£.	£.	£.	£.	£.	£.
<b>MEDICAL ESTABLISHMENTS AT HOME:</b>						
HASLAR - - - - -	6,755	6,757	75	78	590	570
PLYMOUTH - - - - -	5,448	5,361	310	220	300	320
HAULBOWLINE - - - - -	946	914	—	—	—	—
YARMOUTH - - - - -	2,109	2,067	386	386	300	300
PORTLAND - - - - -	454	436	—	—	—	—
DARTMOUTH - - - - -	547	638	200	200	—	—
TOTAL MEDICAL ESTABLISHMENTS AT HOME - - - } - £.	16,259	16,173	971	884	1,190	1,190
<b>MEDICAL ESTABLISHMENTS ABROAD:</b>						
MALTA - - - - -	1,976	2,014	2	2	150	150
LISBON - - - - -	659	659	43	43	20	20
HALIFAX - - - - -	—	—	—	—	50	50
BERMUDA - - - - -	2,110	2,105	—	—	—	—
JAMAICA - - - - -	1,784	1,807	46	46	—	—
CAPE OF GOOD HOPE - - - - -	1,504	1,506	—	—	—	—
TRINCOMALIE - - - - -	—	—	—	—	—	—
HONG KONG - - - - -	2,195	2,121	2	—	200	200
ESQUIMALT - - - - -	497	497	—	—	—	—
YOKOHAMA - - - - -	805	777	174	174	—	—
TOTAL MEDICAL ESTABLISHMENTS ABROAD - - - } - £.	11,530	11,486	267	265	420	420
<b>MARINE INFIRMARIES:</b>						
CHATHAM - - - - -	2,298	2,395	20	30	90	90
PORTSMOUTH (Marine Infirmary, Forton) - - - - - }	1,161	1,072	—	—	—	—
PORTSMOUTH (Marine Artillery Infirmary, Eastney, late Fort Cumberland) - - - - - }	1,216	1,192	19	22	—	—
PLYMOUTH - - - - -	1,174	1,204	—	—	—	—
WALMER - - - - -	968	923	—	—	—	—
TOTAL MARINE INFIRMARIES - - - £.	6,817	6,786	49	52	90	90
<b>T.—Extra Pay to Officers, Seamen and Marines, employed in Medical Establishments at Home and Abroad - - - - - }</b>						
TOTAL MEDICAL ESTABLISHMENTS AT HOME AND ABROAD - - - } - £.	34,606	34,445	1,287	1,201	1,700	1,700

Mem.—For Statement of the numbers and description of Attendants authorised as the Establishments of the several Hospitals and Infirmaries, see Appendix, No. 16, page 193.

AT HOME AND ABROAD—*continued.*

## A B S T R A C T.

D.		E.		F.		REQUIRED for the Service of the Year 1877-78.	LAST VOTE for the Financial Year 1876-77.
CONTINGENCIES.		WAGES, &c., HOSPITAL ATTENDANTS.		WAGES, &c., POLICE FORCE.			
1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.		
£.	£.	£.	£.	£.	£.	£.	£.
373	325	6,267	6,261	1,294	1,297	15,354	15,288
228	183	4,894	4,994	1,021	1,024	12,201	12,102
20	10	681	673	—	—	1,647	1,597
270	230	2,025	1,996	—	—	5,090	4,979
75	66	123	123	—	—	652	625
20	20	164	164	—	—	931	1,022
986	834	14,154	14,211	2,315	2,321	35,875	35,613

K.		L.		M			
57	47	1,320	1,320	310	310	3,815	3,843
60	75	226	226	—	—	1,008	1,023
13	13	167	167	—	—	230	230
16	17	1,014	1,014	—	—	3,140	3,136
13	12	806	777	—	—	2,649	2,642
11	9	557	558	—	—	2,072	2,073
20	20	161	161	—	—	181	181
155	155	1,054	1,054	—	—	3,606	3,530
70	50	310	310	—	—	877	857
77	77	873	848	—	—	1,929	1,876
492	475	6,488	6,435	310	310	19,507	19,391

Q.		R.		S.			
100	115	1,899	1,929	428	430	4,845	4,989
6	6	58	58	—	—	1,225	1,136
90	90	316	325	—	—	1,641	1,629
1	1	58	58	—	—	1,233	1,263
139	139	517	497	—	—	1,624	1,559
336	351	2,848	2,867	428	430	10,568	10,576

		T.					
—	—	200	250	—	—	200	250
1,814	1,660	23,690	23,763	3,053	3,061	66,150	65,830

## Vote 9.

## MARINE DIVISIONS.

I. ESTIMATE of the Sum which will be required in the Year ending 31st March 1878, to defray the Expenses of MARINE DIVISIONS.

Twenty-one Thousand Three Hundred and Sixteen Pounds.

## II.

SUB-HEADS under which this Vote will be accounted for.

	1877-78.	1876-77.	INCREASE.	DECREASE.	
	£.	£.	£.	£.	
A.—SALARIES AND ALLOWANCES, MARINE DIVISIONS	8,597	8,254	343	—	
B.—RENTS, WATER, &c. - - - - - DITTO	5,475	4,419	1,056	—	
C.—GAS - - - - - DITTO	4,300	4,400	—	100	
D.—CONTRIBUTIONS AND GRANTS IN AID, DITTO	744	780	—	36	
E.—CONTINGENCIES - - - - - DITTO	2,200	2,200	—	—	
£.	21,316	20,053	1,399	136	Actual Expenditure in 1875-76. £. 18,204
NET INCREASE - - - £. 1,263.					

The estimated amount of Extra Receipts relating to this Vote to be paid into the Exchequer for the Year 1877-78, is 80 $\frac{1}{2}$ %, included in the total sum of 217,000  $\text{£}$ ., shown in Prefatory Statement of these Estimates, page 3.

## III.

DETAILS of the above.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
CHATHAM :		
*† Divisional Paymaster † - - - - -	£. 300	£. 300
Per-centage to ditto on amount of Imprest Bills - - - - -	180	180
*† Barrack Master, at 10s. a day - - - - -	183	183
Allowance to ditto for charge of Stores - - - - -	46	46
Chaplain, Full Pay, R. N. - - - - - £. 358		
Civil Allowance - - - - - 150	508	490
Schoolmistresses, Assistant Schoolmistresses, and Pupil Teachers, for Girls' and Infants' Schools for Children of the Royal Marines. - - - - -	198	182
Lodging Allowances to ditto - - - - -	62	62
Gratuities to Schoolmistresses for the tuition of Pupil Teachers who pass satisfactory examinations - - - - -	10	10
Extra Pay to Barrack Serjeant, at 2s. 6 d., and Barrack Clerk, at 6 d. a day, in addition to Pay, Royal Marines, and Lodging Allowance to Barrack Serjeant - - - - -	87	77
Compensation to Officers occupying Official Residences, for payment of House Duty - - - - -	2	3
A.—SALARIES and ALLOWANCES, MARINE DIVISIONS - - - £.	1,576	1,533
Lodging Allowance to Officers and Staff Non-Commissioned Officers unprovided with Quarters, and Commuted Allowance for Fuel and Lights - - - - -	911	725
Water for Barracks at Milton, Gravesend, and Tavern Fort. - - - - -	110	110
B.—RENTS, WATER, &c., MARINE DIVISIONS - - - £.	1,021	835
C.—Gas for Barracks - - - - -	700	800
Carried forward - - - £.	3,297	3,168

\* In occupation of Official Residences or Quarters.

† Also in receipt of Half Pay.

‡ Also Purveyor of Chatham Infirmary, with an allowance of 50  $\text{£}$ . per annum.



## Vote 9.—MARINE DIVISIONS—continued.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
CHATHAM—continued.		
Brought forward - - -	£. 3,297	£. 3,168
Amount in aid of the Expense of the Industrial Schools - - - - -	30	30
Contribution towards the Maintenance of a Recreation Room - - - - -	30	30
Allowance in aid of the Expense of the Divisional Band of Music - - - - -	91	91
Education and Maintenance at the Home and Colonial School Society's Training Institution of a qualified Pupil Teacher - - - - -	18	18
D.—CONTRIBUTIONS and GRANTS IN AID, MARINE DIVISIONS - - - £.	169	169
Washing Bedding, Funerals, Carriage of Baggage, Postage and Stationery Allow- ance to Commandants, Adjutants, and Paymasters for Divisional Companies and their Offices, Measuring Coals, Lighting Lamps, and other small Expenses - - -	415	415
TOTAL CHATHAM MARINE DIVISION - - - £.	3,881	3,752
PORTSMOUTH (FORTON):		
Divisional Paymaster - - - - -	300	300
Per-centage to ditto on amount of Imprest Bills - - - - -	160	160
Lodging Allowance to ditto - - - - -	55	55
Barrack Master, at 15 s. a day - - - - -	274	274
Lodging Allowance to ditto - - - - -	55	55
Allowance to ditto for charge of Stores - - - - -	46	46
Compensation to ditto for Loss of Washing Sheet Money - - - - -	40	40
Plain, Full pay, R.N. - - - - - £. 347		
Allowance as Naval Instructor - - - - - 109		
Civil Allowance - - - - - 94		
	550	479
Schoolmistresses, Assistant Schoolmistresses, and Pupil Teachers for Girls' and Infants' Schools for Children of the Royal Marines - - - - -	156	146
Lodging Allowance to ditto - - - - -	97	70
Gratuities to Schoolmistresses for the Tuition of Pupil Teachers passing satisfactory Examinations - - - - -	10	10
Extra Pay to Barrack Serjeant, at 2 s. 6 d., and Barrack Clerk, at 6 d. a day, in addition to Pay, Royal Marines - - - - -	55	55
A.—SALARIES and ALLOWANCES, MARINE DIVISIONS - - - £.	1,798	1,690
Quarters Allowance to Officers and Staff Non-Commissioned Officers unprovided with quarters, and Commuted Allowance for Fuel and Lights - - - - -	1,266 8	1,012 10
B.—RENTS, WATER, &c., MARINE DIVISIONS - - - £.	1,274	1,022
Gas for Barracks - - - - -	700	600
Amount in aid of the Expense of the Industrial Schools - - - - -	30	30
Contribution towards the Maintenance of a Recreation Room - - - - -	30	30
Allowance in aid of the Expense of the Divisional Band of Music - - - - -	91	91
Education and Maintenance at the Home and Colonial School Society's Training Institution of a qualified Pupil Teacher - - - - -	—	18
D.—CONTRIBUTIONS and GRANTS IN AID, MARINE DIVISIONS - - - £.	151	169
Conveyance of Marines, per Floating Bridge, between Portsmouth and Gosport - - -	90	90
Washing Bedding, Funerals, Carriage of Baggage, Postage and Stationery Allowance to Commandants, Adjutants, and Paymasters for Divisional Companies and their Offices, Measuring Coals, Lighting Lamps, and other small Expenses - - - - -	475	475
E.—CONTINGENCIES, MARINE DIVISIONS - - - £.	565	565
TOTAL FORTON MARINE DIVISION - - - £.	4,488	4,046

\* Also in receipt of Half Pay.

## Vote 9.—MARINE DIVISIONS—continued.

PORTSMOUTH:		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
MARINE ARTILLERY, EASTNEY AND FORT CUMBERLAND:		£.	£.
*†Divisional Paymaster - - - - -		300	300
Per-centage to ditto on amount of Imprest Bills - - - - -		225	225
†Barrack Master, at 15 s. a day - - - - -		274	274
Lodging Allowance to ditto - - - - -		55	55
Allowance to ditto for charge of Stores - - - - -		46	46
Compensation to ditto for loss of Washing Sheet Money - - - - -		40	40
Chaplain borne on the books of H. M. S. "Duke of Wellington,"—Full Pay	£. 310		
Civil Allowance - - - - -	149		
Allowance as Naval Instructor - - - - -	91		
Schoolmistresses, and Pupil Teachers at the 'Girls' and Infants' Schools for Children of the Royal Marines - - - - -		550	533
Lodging Allowances to ditto - - - - -		242	233
Gratuities to Schoolmistresses for the Tuition of Pupil Teachers passing satisfactory Examinations - - - - -		88	88
		10	10
Extra Pay to Barrack Serjeant, at 2 s. 6 d., and two Barrack Clerks, one at 1 s., and one at 6 d. a day, in addition to Pay, Royal Marines - - - - -		73	73
A.—SALARIES and ALLOWANCES, MARINE DIVISIONS - - - £.		1,903	1,882
Lodging Allowance to Officers and Staff Non-Commissioned Officers unprovided with Quarters, and commuted Allowance for Fuel and Lights - - - - -		821	606
Tithes - - - - -		33	33
Water supplied for Barracks - - - - -		400	380
B.—RENTS, WATER, &c., MARINE DIVISIONS - - - £.		1,254	1,019
C.—Gas for Barracks - - - - -		1,300	1,400
Grant in aid of the Expense of the Industrial Schools - - - - -		30	30
Contribution towards the Maintenance of a Recreation Room - - - - -		30	30
Allowance in aid of the Expense of the Divisional Band of Music - - - - -		91	91
For Education and Maintenance at the Home and Colonial School Society's Training Institution of qualified Pupil Teachers - - - - -		36	—
D.—CONTRIBUTIONS and GRANTS IN AID, MARINE DIVISIONS - - - £.		187	151
Conveyance of the Royal Marine Artillery, per Floating Bridge, between Portsmouth and Gosport - - - - -		20	20
Washing Bedding, Funerals, Carriage of Baggage, Postage and Stationery Allowance to Commandants, Adjutants, and Paymasters for Divisional Companies and their Offices, Measuring Coals, Lighting Lamps, and other small Expenses - - - - -		425	475
E.—CONTINGENCIES, MARINE DIVISIONS - - - £.		445	495
TOTAL MARINE ARTILLERY DIVISION - £.		5,089	4,947

\* In occupation of Official Residences or Quarters.

† Also in receipt of Half Pay.

Vote 9.—MARINE DIVISIONS—*continued.*

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
<b>PLYMOUTH:</b>		
Divisional Paymaster†	£. 300	£. 300
Per-centage to ditto on amount of Imprest Bills	195	195
Lodging Allowance to ditto	55	55
*† Barrack Master, at 10s. a day	182	182
Allowance to ditto for charge of Stores	46	46
Compensation to ditto for Payment of House Duty	2	2
Chaplain, Full Pay, R.N.	£. 383	
Civil Allowance	150	
Schoolmistresses and Pupil Teachers at the Girls' and Infants' Schools for Children of the Royal Marines	533	497
Lodging Allowances to ditto	216	210
Gratuities to Schoolmistresses for the Instruction of Pupil Teachers who pass satisfactory Examinations	90	—
Extra Pay to Barrack Serjeant, at 2s. 6d., and two Barrack Clerks, one at 1s., and one at 6d. a day, in addition to Pay, Royal Marines	10	10
	73	73
<b>A.—SALARIES and ALLOWANCES, MARINE DIVISIONS</b>	<b>1,702</b>	<b>1,570</b>
Lodging Allowance to Officers and Staff Non-Commissioned Officers unprovided with Quarters, and Commuted Allowance for Fuel and Lights	940	740
Ground Rent for the Barracks	21	21
Tithes, &c.	23	3
Water supplied for the Barracks	110	110
<b>B.—RENTS, WATER, &amp;c., MARINE DIVISIONS</b>	<b>1,094</b>	<b>874</b>
<b>C.—Gas for Barracks</b>	<b>700</b>	<b>700</b>
Grant in aid of the Expense of Industrial Schools	30	30
Contribution towards the Maintenance of a Recreation Room	30	30
Allowance in aid of the Expense of the Divisional Band of Music	91	91
For Education and Maintenance at the Home and Colonial School Society's Training Institution of Qualified Pupil Teachers	18	90
<b>D.—CONTRIBUTIONS and GRANTS IN AID, MARINE DIVISIONS</b>	<b>169</b>	<b>241</b>
<b>E.—Washing Bedding, Funerals, Carriage of Baggage, Postage and Stationery Allowance to Commandants, Adjutants, and Paymasters for Divisional Companies and their Offices, Measuring Coals, Lighting Lamps, and other small Expenses</b>	<b>425</b>	<b>425</b>
<b>TOTAL PLYMOUTH MARINE DIVISION</b>	<b>4,090</b>	<b>3,810</b>

\* In occupation of Official Residences or Quarters.

† Also in receipt of Half Pay.



Vote 9.—MARINE DIVISIONS—*continued.*

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
<b>WALMER RECRUIT DEPÔT:</b>		
*Paymaster of the Depôt † - - - - -	£. 300	£. 300
Per-centage to ditto on amount of Imprest Bills - - - - -	105	105
*Barrack Master, at 10s. a day † - - - - -	182	182
Allowance to ditto for charge of Stores - - - - -	46	46
Clerk of the Works - - - - -	258	248
Chaplain borne on the books of H.M.S. "Duncan"—Full Pay - - - - - £. 329		
Civil Allowance - - - - -	130	
Allowance to ditto as Naval Instructor - - - - - 91		
	550	550
Schoolmistress, Assistant Schoolmistress, and Pupil Teachers at the Schools for Children of the Royal Marines - - - - -	79	70
Lodging Allowances to ditto - - - - -	11	—
Gratuity to Schoolmistress for tuition of Pupil Teachers passing satisfactory Examinations - - - - -	5	5
Extra Pay to Barrack Serjeant, at 2s. 6d.; Assistant Barrack Serjeant, at 1s.; and two Barrack Clerks, at 6d. a day, in addition to Pay, Royal Marines - - - - -	82	73
<b>A.—SALARIES and ALLOWANCES, MARINE DIVISIONS - - - £.</b>	<b>1,618</b>	<b>1,579</b>
Lodging Allowance to Officers and Staff Non-Commissioned Officers unprovided with Quarters, and Commuted Allowance for Fuel and Light - - - - -	542	379
Tithes - - - - -	10	10
Water supplied for the Depôt - - - - -	280	280
<b>B.—RENTS, WATER, &amp;c., MARINE DIVISIONS - - - £.</b>	<b>832</b>	<b>662</b>
<b>C.—Gas for Depôt and Barracks - - - - -</b>	<b>900</b>	<b>900</b>
Grant in aid of the Expense of the Industrial Schools - - - - -	20	20
Contribution towards the Maintenance of a Recreation Room - - - - -	30	30
Education and Maintenance at the Home and Colonial School Society's Training Institution of a qualified Pupil Teacher - - - - -	18	—
<b>D.—CONTRIBUTIONS and GRANTS IN AID, MARINE DIVISIONS - - - £.</b>	<b>68</b>	<b>50</b>
<b>E.—Washing Bedding, Funerals, Carriage of Baggage, Postage and Stationery Allowance, Lighting Lamps, and other small Expenses - - - - -</b>	<b>350</b>	<b>300</b>
<b>TOTAL WALMER RECRUIT DEPÔT - - - £.</b>	<b>3,768</b>	<b>3,498</b>

\* In occupation of Official Residences or Quarters.

† Also in receipt of Half Pay.

## ABSTRACT.

DIVISIONS.	A.		B.		C.		D.		E.		REQUIRED for the Service of the Year 1877-78.	LAST VOTE for the Financial Year 1876-77.
	SALARIES AND ALLOWANCES.		RENTS, WATER, &c.		GAS.		CONTRIBUTIONS AND GRANTS IN AID.		CONTINGENCIES.			
	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.		
•	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.
CHATHAM - - -	1,576	1,533	1,021	835	700	800	169	169	415	415	3,881	3,752
PORTSMOUTH (MARINE BAR- RACKS, FORTON) - - }	1,798	1,690	1,274	1,022	700	600	151	169	565	565	4,488	4,046
PORTSMOUTH (MARINE AR- TILLERY BARRACKS, EAST- NEY AND FORT CUMBER- LAND) - - - }	1,903	1,882	1,254	1,019	1,300	1,400	187	151	445	495	5,089	4,947
PLYMOUTH - - -	1,702	1,570	1,094	874	700	700	169	241	425	425	4,090	3,810
WALMER RECRUIT DEPÔT -	1,618	1,579	832	609	900	900	68	50	350	300	3,768	3,498
TOTAL - - £.	8,597	8,254	5,475	4,419	4,300	4,400	744	780	2,200	2,200	21,316	20,053

VOTE 10.

NAVAL STORES FOR BUILDING AND REPAIRING THE FLEET, &c., STEAM MACHINERY, AND SHIPS BUILT BY CONTRACT.

I. ESTIMATE of the Sum which will be required in the Year ending 31st March 1878, to defray the Expense of NAVAL STORES for BUILDING, REPAIRING, and OUTFITTING the FLEET and COAST GUARD, STEAM MACHINERY, and SHIPS Built by CONTRACT.

Section I.—One Million Two Hundred and Seven Thousand Three Hundred Pounds.  
Section II.—One Million and Forty-two Thousand Pounds.

II. SUB-HEADS under which this Vote will be accounted for.

	1877-78.	1876-77.	INCREASE.	DECREASE.	
SECTION I.—NAVAL STORES.	£.	£.	£.	£.	
A.—TIMBER, MASTS, DEALS, &c. - - - - -	138,700	143,400	—	4,700	
B.—METALS, AND METAL ARTICLES (including Iron, Armour-Plates, Iron Beams, and Iron Masts) - - - - -	464,000	508,590	—	44,590	
C.—COALS AND OTHER FUEL, FOR STEAM VESSELS AND DOCKYARD PURPOSES - - - - -	109,000	168,500	—	59,500	
D.—HEMP, CANVAS, &c. - - - - -	149,000	123,000	26,000	—	
E.—PAINT MATERIALS, OILS, PITCH, TAR, TALLOW, AND OTHER MISCELLANEOUS ARTICLES - - - - -	176,600	172,830	3,770	—	
F.—PURCHASES BY OFFICERS OF SHIPS, FOREIGN YARDS, AND COAST GUARD, AND FOR FREIGHT, &c., OF NAVAL STORES -	170,000	145,000	25,000	—	
£.	1,207,300	1,261,320	54,770	108,790	Actual Expenditure in 1875-76. £. 1,270,048
NET DECREASE - - - £. 54,020.					

Note.—The Estimated Amount of Old Stores and Extra Receipts relating to this Vote, to be paid into the Exchequer for the year 1877-78, is £. 94,000, included in total sum of £. 217,000, shown in Prefatory Statement of these Estimates, p. 3.

SECTION II.—STEAM MACHINERY AND SHIPS BUILT BY CONTRACT.	487,233			50,928	
A.—STEAM MACHINERY FOR HER MAJESTY'S SHIPS AND VESSELS	439,455	538,161	—	107,706	
	302,517			384,422	
B.—SHIPS, &c. BUILDING BY CONTRACT - - - - -	394,295	686,939	—	292,644	
C.—STEAM BOATS TO BE ORDERED - - - - -	7,100	5,500	1,600	—	
D.—EXPERIMENTAL PURPOSES - - - - -	15,050	10,000	5,050	—	
E.—REPAIRS OF SHIPS AT OTHER THAN HER MAJESTY'S DOCK-YARDS - - - - -	65,000	33,000	32,000	3,000	
F.—SALARIES, PAY, SUBSISTENCE, &c. OF OFFICERS &c., SUPERIN-TENDING SHIPS BUILDING BY CONTRACT AND OTHER WORKS	14,000	17,000	—	3,000	
G.—FOR HYDRAULIC AND STEAM MACHINERY, AND OTHER FITTINGS CONNECTED WITH TURRETS, AND FOR TORPEDO MACHINERY - - - - -	65,100	55,000	10,100	—	
H.—BREAKING UP SHIPS, BOILERS AND MACHINERY - -	6,000	8,000	—	2,000	
I.—PURCHASE OF TORPEDOES - - - - -	80,000	—	80,000	—	
£.	1,042,000	1,353,600	128,750 96,750	440,350 408,350	Actual Expenditure in 1875-76. £. 913,675
NET DECREASE - - - £. 311,600.					

Note.—For statements showing the distribution of the amounts proposed to be Voted for the several Services of Vote 10, Sections I. and II., see Appendices, Nos. 17 A., B., C., and D., pp. 194-196.



VOTE 10.—NAVAL STORES FOR BUILDING AND REPAIRING THE FLEET, &c.—continued.

III. DETAILS of the foregoing.

SECTION I.—NAVAL STORES.	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
	£.	£.
For the Purchase of Naval Stores for the Building, Repair, and Outfit of the Fleet and Coast Guard, viz.:		
A.—Timber, Masts, Deals, &c. - - - - -	138,700	143,400
B.—Metals and Metal Articles (including Iron, Armour-plates, Iron Beams, and Iron Masts), viz.:		
Copper and Copper Articles, Iron and Iron Articles, Pig Iron, Iron Wire Rope, Anchors, Cables, Fire-hearths, Capstans, Pump and Engine Gear, Lead, &c. - - - - -	464,000	508,590
C.—Coals and other Fuel:		
For Steam Vessels - - - - - £. 63,240		
For Yard purposes - - - - - 45,760	109,000	168,500
D.—Hemp, Canvas, Hammocks, Seamen's Bags, Coal Sacks, Flags, Bunting, Worsted, Fearnought, and Kersey - - - - -	149,000	123,000
E.—Paint Materials, Oil, Pitch, Tar, Tallow, Boats, Furniture for Ships, &c., Glass, Hides and Leather, Oars, Compositions, and various Miscellaneous Stores - - - - -	176,600	172,830
F.—For Purchases by Officers of Ships, Foreign Yards, and Coast Guard, and for Freight, &c., of Naval Stores - - - - -	170,000	145,000
TOTAL - - - £.	1,207,300	1,261,320

Note.—The Estimated Amount of Old Stores and Extra Receipts relating to this Vote, to be paid into the Exchequer for the year 1877-78, is £. 94,000, included in total sum of £. 217,000, shown in Prefatory Statement of these Estimates, p. 3.

VOTE 10.—NAVAL STORES FOR BUILDING AND REPAIRING THE FLEET, &c.—*continued.*

SECTION II.—STEAM MACHINERY AND SHIPS BUILT BY CONTRACT, &c.			REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
For Purchase of Steam Machinery for Her Majesty's Ships and Vessels, and for Payments to be made for Ships and Vessels building or to be built by Contract, viz. :			£.	£.
A.—STEAM MACHINERY FOR HER MAJESTY'S SHIPS AND VESSELS :				
	£.	£.		
For Engines already ordered - - - - -	441,483			
Deduct: Amount to be voted in future years to com- plete contracts - - - - -	133,650			
		307,833		
	229,400			
For Engines to be ordered, and for repairing Engines -	<del>190,500</del>			
Deduct: Amount to be voted in future years to com- plete contracts - - - - -	50,000 <del>67,878</del>	179,400 <del>122,622</del>		
			487,233	
			<del>430,455</del>	
		487,233		
TOTAL for STEAM MACHINERY - - - £.		<del>430,455</del>		538,161
B.—SHIPS, &c., BUILDING BY CONTRACT.				
	£.	£.		
For Ships already ordered - - - - -	431,302			
Deduct: Amount to be voted in future years to complete contracts - - - - -	148,457			
		282,845		
	19,672			
For Ships to be ordered - - - - -	<del>159,200</del>			
Deduct: Amount to be voted in future years to complete contracts - - - - -	Nil. <del>47,750</del>	19,672 <del>111,450</del>		
			302,517	
			<del>394,295</del>	
		302,517		
TOTAL for SHIPS BUILDING by CONTRACT - - - £. (Engines provided for under Item A.)		<del>394,295</del>		686,939
C.—For Steam Boats to be ordered (Engines provided for under Item A.) -			7,100	5,500
D.—For Experimental Purposes - - - - -			15,050	10,000
E.—For the Repairs of Ships at other than Her Majesty's Dockyards - -			<del>65,000</del> <del>30,000</del>	33,000
F.—For the Salaries, Pay, Subsistence and Travelling Expenses of Dockyard Officers, Workmen, and others superintending Ships Building by Con- tract, and other Works - - - - -			14,000	17,000
G.—For Hydraulic and Steam Machinery, and other Fittings connected with Turrets, and for Torpedo Machinery - - - - -			65,100	55,000
H.—For breaking-up Ships, Boilers and Machinery - - - - -			6,000	8,000
I.—For Purchase of Torpedoes - - - - -			80,000	—
TOTAL - - - £.			1,042,000	1,353,600

## VOTE 11.

### NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS.

I. ESTIMATE of the Sum which will be required in the Year ending 31st March 1878, to defray the EXPENSE of NEW WORKS, BUILDINGS, MACHINERY, and REPAIRS.

Five Hundred and Forty-five Thousand Seven Hundred and Fifteen Pounds.

II. SUB-HEADS under which this Vote will be accounted for.

	1877-78.	1876-77.	INCREASE.	DECREASE.	
	£.	£.	£.	£.	
A.—NEW WORKS, &c., CHATHAM - - - - -	108,610	92,275	16,335	—	
B.— DITTO - SHEERNESS - - - - -	9,662	12,590	—	2,927	
C.— DITTO - PORTSMOUTH - - - - -	118,148	169,000	—	50,852	
D.— DITTO - DEVONPORT AND KEYHAM - - - - -	68,206	58,544	9,662	—	
E.— DITTO - PEMBROKE - - - - -	15,548	17,390	—	1,842	
F.— DITTO - HAULBOWLINE - - - - -	26,570	31,040	—	4,470	
G.— DITTO - BREAKWATERS - - - - -	10,161	10,915	—	754	
H.— DITTO - LEWES, &c. - - - - -	310	260	50	—	
I.— DITTO - VICTUALLING ESTABLISHMENTS AT HOME - - - - -	9,790	13,338	—	3,548	
K.— DITTO - MEDICAL ESTABLISHMENTS AT HOME - - - - -	9,115	7,865	1,250	—	
L.— DITTO - MARINE BARRACKS - - - - -	19,055	18,915	140	—	
M.— DITTO - COAST GUARD - - - - -	25,000	25,000	—	—	
N.—REPAIRS, &c. AT THE ADMIRALTY OFFICES AT WHITEHALL - - - - -	8,000	8,000	—	—	
O.—NEW WORKS, &c., NAVAL COLLEGES - - - - -	11,840	5,380	6,460	—	
P.— DITTO - NAVAL ESTABLISHMENTS ABROAD - - - - -	68,669	63,457	5,212	—	
Q.— DITTO - VICTUALLING ESTABLISHMENTS ABROAD - - - - -	5,200	5,050	150	—	
R.— DITTO - MEDICAL ESTABLISHMENTS ABROAD - - - - -	6,580	5,230	1,350	—	
S.— DITTO - CONTINGENCIES (WORKS AND BUILDINGS, AND MACHINERY) - - - - -	13,250	13,000	250	—	
T.—TEMPORARY SUPERINTENDENCE OF ENGINEERING AND ARCHITECTURAL WORKS - - - - -	12,000	12,000	—	—	
	£. 545,715	569,249	40,859	64,393	Actual Expenditure in 1876-76.
					£. 625,087

NET DECREASE - - - £.23,534



## Vote 11.—NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS—continued.

## III.

## DETAILS of the foregoing Charges.

DESCRIPTION OF WORKS for each Establishment.	1.	2.	3.	4.		5.
	TOTAL ESTIMATE for the Work.	AMOUNT already Voted for it.	GROSS SUM already Ex- pended upon it. (Posted to 31 Dec. 1876.)	VOTE REQUIRED for the ensuing Year, 1877-78.		Further ESTIMATE for completing the Work.
	£.	£.	£.	£.	£.	£.
NAVAL YARDS AT HOME.						
A.—CHATHAM :						
Extension of the Yard - - - - - (Vote last year, £. 45,000.)	1,950,000	1,677,000	1,736,000	65,000	-	132,000
Boiler makers' shop and store: to complete - -	-	-	-	5,600		
Shed for scrap iron to be remanufactured - -	-	-	-	520		
Interest on outlay for, and maintenance of, branch railway into dockyard - - - - -	-	-	-	1,840		
Tramroads in the yard - - - - -	-	-	-	1,000		
Subways, with water and gas mains to new basins -	-	-	-	1,650		
Removing mud from harbour, river dock, and basin entrance - - - - -	-	-	-	750		
Foundations for machinery - - - - -	-	-	-	3,600		
Other works under 500 <i>l.</i> each - - -	-	-	-	2,540		
Repairs and maintenance of buildings -	-	-	-	6,500		
				88,400		
New machinery - - - - -	-	-	-	8,115		
Repairs to plant and machinery - - -	-	-	-	11,215		
Repairs and maintenance of caissons - - -	-	-	-	880		
TOTAL Machinery, &c. - - -				20,210		
TOTAL CHATHAM YARD - - -				-	108,610	
B.—SHEERNESS:						
Foundations for machinery - - - - -	-	-	-	220		
Other works under 500 <i>l.</i> each - - -	-	-	-	1,180		
Repairs and maintenance of buildings -	-	-	-	2,500		
Ditto - ditto - naval barracks -	-	-	-	500		
TOTAL Works and Buildings - - -				4,400		
New machinery - - - - -	-	-	-	1,563		
Repairs to plant and machinery - - -	-	-	-	3,300		
Repair and maintenance of caissons - - -	-	-	-	400		
Total Machinery, &c. - - -				5,263		
TOTAL SHEERNESS YARD - - -				-	9,663	
				Carried forward - £.	118,273	

Vote 11.—NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS—*continued.*

DESCRIPTION OF WORKS for each Establishment.	1.	2.	3.	4.		5.
	TOTAL ESTIMATE for the Work.	AMOUNT already Voted for it.	GROSS SUM already Ex- pended upon it. (Posted to 31 Dec. 1876.)	VOTE REQUIRED for the ensuing Year, 1877-78.		Further ESTIMATE for completing the Work.
	£.	£.	£.	£.	£.	£.
Brought forward - - -	-	-	-	-	118,273	
NAVAL YARDS AT HOME— <i>continued.</i>						
C.—PORTSMOUTH:						
Extension of the yard - - - - -	2,350,000	2,350,000	2,019,590	† * 50,000	-	235,000
(Vote last year, £. 100,000.)						
Torpedo store - - - - -	-	-	-	5,000		
Working-shed between middle lock and deep dock -	-	-	-	950		
Ditto - near the 80-ton sheers -	-	-	-	1,250		
Ditto - on west side of dock, No. 13 -	-	-	-	1,400		
Shed for picking and drying sullage -	-	-	-	940		
Railway for carrying coals -	-	-	-	510		
Extending railway on west side of dock, No. 12 -	-	-	-	600		
Dredging the harbour -	-	-	-	20,000		
Towards the erection of Police quarters at extension works -	-	-	-	3,000		
Alterations to slip No. 4 -	-	-	-	800		
Re-arrangement of timber pond at the Hard, Portsea -	-	-	-	1,500		
Extension of storehouses -	-	-	-	700		
Foundations for machinery -	-	-	-	1,400		
Other works under 500 l. each -	-	-	-	990		
Repairs and maintenance of buildings -	-	-	-	9,000		
TOTAL Works and Buildings - - -	-	-	-	98,040		
New machinery - - - - -	-	-	-	9,108		
Repairs to plant and machinery -	-	-	-	10,000		
Repairs and maintenance of caissons -	-	-	-	1,000		
TOTAL Machinery, &c. - - -	-	-	-	20,108		
TOTAL PORTSMOUTH YARD - - -	-	-	-	-	118,148	
D.—DEVONPORT AND KEYHAM:						
DEVONPORT:						
New dry dock, No. 3 - - - - -	135,000	15,000	216	30,000	-	90,000
Renewing jetties - - - - -	-	-	-	1,000		
Foundations for machinery -	-	-	-	530		
Other works under 500 l. each -	-	-	-	1,110		
Repairs and maintenance of buildings -	-	-	-	4,500		
TOTAL Works and Buildings - - -	-	-	-	37,140		
New machinery - - - - -	-	-	-	1,979		
Repairs to plant and machinery -	-	-	-	4,680		
TOTAL Machinery - - -	-	-	-	6,659		
TOTAL DEVONPORT YARD - - -	-	-	-	43,799		
Carried forward - - -	-	-	-	£.	226,421	

\* Contract work, £. 28,000. Convict work, £. 22,000.

† Re-vote.

Vote 11.—NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS—continued.

DESCRIPTION OF WORKS for each Establishment.	1.	2.	3.	4.		5.
	TOTAL ESTIMATE for the Work.	AMOUNT already Voted for it.	GROSS SUM already Ex- pended upon it. (Posted to 31 Dec. 1876.)	VOTE REQUIRED for the ensuing Year, 1877-78.		Further ESTIMATE for completing the Work.
	£.	£.	£.	£.	£.	£.
Brought forward - - -	-	-	-	-	236,421	
NAVAL YARDS AT HOME—continued.						
D.—DEVONPORT AND KEYHAM—continued.						
Brought forward - - -	-	-	-	43,799		
KEYHAM:						
Fire-engine house and stables - - -	-	-	-	500		
Interest on outlay for, and maintenance of, branch line of railway into yard - - -	-	-	-	580		
Continuation of granite pitch paving in roadways - - -	-	-	-	1,000		
Repair of factory smoke towers - - -	-	-	-	*4,000		
Forming narrow gauge railway in yard - - -	-	-	-	600		
Foundations for machinery - - -	-	-	-	670		
Other works under 500 l. each - - -	-	-	-	200		
Repairs and maintenance of buildings - { For details, see App., pp. 197 and 200. }	-	-	-	4,000		
TOTAL Works and Buildings - - -	-	-	-	11,550		
New machinery - - -	-	-	-	4,242		
Repairs to plant and machinery - - -	-	-	-	5,765		
Repairs and maintenance of caissons - - -	-	-	-	*2,850		
TOTAL Machinery, &c. - - -	-	-	-	12,857		
TOTAL KEYHAM YARD - - -	-	-	-	24,407		
TOTAL DEVONPORT AND KEYHAM YARDS - - -	-	-	-	-	68,206	
E.—PEMBROKE:						
Re-construction of landing place - - -	-	-	-	1,000		
Interest on outlay for, and maintenance of, branch line of railway into yard - - -	-	-	-	1,030		
Foundations for machinery - - -	-	-	-	270		
Other works under 500 l. each - - -	-	-	-	600		
Repairs and maintenance of buildings - { For details, see App., pp. 197 and 200. }	-	-	-	4,880		
TOTAL Works and Buildings - - -	-	-	-	7,780		
New machinery - - -	-	-	-	3,393		
Repairs to plant and machinery - - -	-	-	-	4,255		
Repairs and maintenance of caissons - - -	-	-	-	120		
TOTAL Machinery, &c. - - -	-	-	-	7,768		
TOTAL PEMBROKE YARD - - -	-	-	-	-	15,548	
F.—HAULBOWLINE:						
Extension of the yard - - -	420,000	242,680	219,950	25,000	-	160,000
(Vote last year, £. 30,000.)						
Labourers' cottages - - -	-	-	-	720		
Repairs and maintenance of buildings - { For details, see App., p. 200. }	-	-	-	850		
TOTAL HAULBOWLINE - - -	-	-	-	-	26,570.	
Carried forward - - -				£.	346,745	

\* Part Re-vote.



## Vote 11.—NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS—continued.

DESCRIPTION OF WORKS for each Establishment.	1.	2.	3.	4.		5.
	TOTAL ESTIMATE for the Work.	AMOUNT already Voted for it.	GROSS SUM already Ex- pended upon it. (Posted to 31 Dec. 1876.)	VOTE REQUIRED for the ensuing Year, 1877-78.		Further ESTIMATE for completing the Work.
	£.	£.	£.	£.	£.	£.
Brought forward - - -	-	-	-	-	346,745	-
NAVAL YARDS AT HOME—continued.						
G.—BREAKWATERS:						
PLYMOUTH BREAKWATER:						
Repairs and maintenance - { For details, see App. p. 200. }	-	-	-	-	2,430	-
PORTLAND BREAKWATER COALING AND WATERING DEPÔT:						
Interest on outlay for, and maintenance of, branch line of railway to Breakwater.	-	-	-	800		
Other works under 500 l. each -	-	-	-	100		
Repairs and maintenance of buildings, { For details, including breakwater - { see App., pp. 198 and 200. }	-	-	-	1,800		
TOTAL Works and Buildings - - -	-	-	-	2,700		
Repairs to plant and machinery - - -	-	-	-	31		
TOTAL PORTLAND BREAKWATER - - -	-	-	-	-	2,731	
ALDERNEY BREAKWATER:						
Repairs and maintenance - { For details, see App., p. 200. }	-	-	-	-	5,000	
TOTAL BREAKWATERS - - -	-	-	-	-	10,161	
H.—LEWES NAVAL PRISON:						
Repairs and maintenance of buildings - { For details, see App., p. 200. }	-	-	-	-	150	
MYLOR WATERING DEPÔT:						
Repairs and maintenance of buildings { For details, see App., p. 200. }	-	-	-	-	160	
TOTAL LEWES, &c. - - -	-	-	-	-	310	
I.—VICTUALLING ESTABLISHMENTS AT HOME:						
ROYAL VICTORIA YARD, AT DEPTFORD:						
Foundations for machinery - - -	-	-	-	180		
Repairs and maintenance of buildings { For details, see App., p. 200. }	-	-	-	1,800		
TOTAL Works and Buildings - - -	-	-	-	1,980		
New machinery - - -	-	-	-	370		
Repairs to plant and machinery - - -	-	-	-	785		
TOTAL Machinery - - -	-	-	-	1,155		
TOTAL VICTORIA YARD - - -	-	-	-	-	3,135	
ROYAL CLARENCE YARD, AT GOSPORT:						
Roof and platform to Her Majesty's railway in yard -	-	-	-	1,600		
Repairs and maintenance of buildings { For details, see App., p. 200. }	-	-	-	1,800		
TOTAL Works and Buildings - - -	-	-	-	3,400		
Repairs to plant and machinery - - -	-	-	-	435		
TOTAL CLARENCE YARD - - -	-	-	-	-	3,835	
Carried forward - - -	-	-	-	£.	357,216	

Vote 11.—NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS—continued.

DESCRIPTION OF WORKS for each Establishment.	1.	2.	3.	4.		5.
	TOTAL ESTIMATE for the Work.	AMOUNT already Voted for it.	GROSS SUM already Ex- pended upon it. (Posted to 31 Dec. 1876.)	VOTE REQUIRED for the ensuing Year, 1877-78.		Further ESTIMATE for completing the Work.
	£.	£.	£.	£.	£.	£.
Brought forward - - -	-	-	-	-	357,216	
<b>I.—VICTUALLING ESTABLISHMENTS AT HOME—cont<sup>d</sup>.</b>						
ROYAL WILLIAM YARD, AT PLYMOUTH:						
Works under 500 l. each - - - { For details, see App. pp. 198	-	-	-	190		
Repairs and maintenance of buildings { and 200.	-	-	-	750		
TOTAL Works and Buildings - - -	-	-	-	940		
New machinery - - - - -	-	-	-	170		
Repairs to plant and machinery - - -	-	-	-	1,710		
TOTAL Machinery - - -	-	-	-	1,880		
TOTAL WILLIAM YARD - - -	-	-	-	-	2,820	
TOTAL VICTUALLING ESTABLISH- MENTS AT HOME - - - }	-	-	-	-	9,790	
<b>K.—MEDICAL ESTABLISHMENTS AT HOME:</b>						
CHATHAM:						
Works under 500 l. each - - - { For details see App., pp. 198	-	-	-	50		
Repairs and maintenance of buildings { and 200.	-	-	-	750		
					800	
HASLAR:						
Constructing tramway from jetty to Central Arcade -	-	-	-	640		
Other works under 500 l. each - - - { For details, see App., pp. 198	-	-	-	900		
Repairs and maintenance of build- { ings and breakwater - - - { and 200.	-	-	-	3,000		
TOTAL Works and Buildings - - -	-	-	-	4,540		
Repairs to plant and machinery - - -	-	-	-	225		
TOTAL HASLAR - - - - -	-	-	-	-	4,765	
PLYMOUTH:						
Erection of a church - - - - -	3,500	-	-	500	-	3,000
Other works under 500 l. each - - - { For details, see App., pp. 198	-	-	-	270		
Repairs and maintenance of buildings { and 200.	-	-	-	1,300		
					2,070	
YARMOUTH:						
Works under 500 l. each - - - - -	-	-	-	420		
Repairs and maintenance of buildings { see App., pp. 198 and 200.	-	-	-	1,000		
					1,420	
PORTLAND:						
Repairs and maintenance of buildings { For details, see App., p. 200.	-	-	-	-	50	
Carried forward - - -				£.	367,006	

Vote 11.—NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS—*continued.*

DESCRIPTION OF WORKS for each Establishment.	1.	2.	3.	4.		5.
	TOTAL ESTIMATE for the Work.	AMOUNT already Voted for it.	GROSS SUM already Expended upon it. (Posted to 31 Dec. 1876.)	VOTE REQUIRED for the ensuing Year, 1877-78.		Further ESTIMATE for completing the Work.
	£.	£.	£.	£.	£.	£.
Brought forward - - -	-	-	-	-	367,006	
<b>K.—MEDICAL ESTABLISHMENTS AT HOME—<i>continued.</i></b>						
MYLOR, Sick Quarters:						
Repairs and maintenance of buildings { For details, see App., p. 200. }	-	-	-	-	10	
TOTAL MEDICAL ESTABLISH- MENTS AT HOME - - }	-	-	-	-	9,115	
<b>L.—MARINE BARRACKS AT HOME:</b>						
CHATHAM:						
Works under 500 £. each - - -	-	-	-	250		
Repairs and maintenance of buildings { For details, see App., pp. 198 and 200. }	-	-	-	1,500	1,750	
PORTSMOUTH:						
Forton Barracks:						
Works under 500 £. each - - -	-	-	-	350		
Repairs and maintenance of buildings { For details, see App., pp. 198 and 200. }	-	-	-	2,100		
TOTAL Works and Buildings.	-	-	-	2,450		
Repairs to plant and machinery - - -	-	-	-	45		
TOTAL FORTON - - -	-	-	-	-	2,495	
ROYAL MARINE ARTILLERY BARRACKS (EASTNEY):						
Protecting line of shore - - -	-	-	-	2,500		
Other works under 500 £. each - - -	-	-	-	100		
Repairs and maintenance of buildings { For details, see App., pp. 198 and 200. }	-	-	-	2,000	4,600	
PLYMOUTH:						
Works under 500 £. each - - -	-	-	-	890		
Repairs and maintenance of buildings { For details, see App., pp. 198 and 200. }	-	-	-	1,400	2,290	
FORT STAMFORD:						
Repairs and maintenance of buildings { For details, see App. p. 200. }	-	-	-	-	30	
Carried forward - - -				£.	376,121	



Vote 11.—NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS—*continued.*

DESCRIPTION OF WORKS for each Establishment.	1.	2.	3.	4.		5.
	TOTAL ESTIMATE for the Work.	AMOUNT already Voted for it.	GROSS SUM already Expended upon it. (Posted to 31 Dec. 1876.)	VOTE REQUIRED for the ensuing Year, 1877-78.		Further ESTIMATE for completing the Work.
	£.	£.	£.	£.	£.	£.
Brought forward - - -	-	-	-	-	376,121	-
<b>L.—MARINE BARRACKS AT HOME—<i>continued.</i></b>						
WALMER:						
New canteen, with superintendent's quarters - - -	3,100	1,500	-	1,600		
Drill shed - - -	-	-	-	1,000		
Reading and recreation room - - -	-	-	-	1,000		
New provost prison - - -	2,000	1,200	-	800		
Other works under 500 <i>l.</i> each - { For details, see App., pp. 198 }	-	-	-	1,490		
Repairs and maintenance of buildings { and 200. }	-	-	-	2,000		
					7,890	
<b>TOTAL MARINE BARRACKS - - -</b>	-	-	-	-	19,055	
<b>M.—COAST GUARD:</b>						
Purchase and erection of buildings - - -	-	-	-	15,000		
Repairs and maintenance of buildings { For details, see App., p. 200. }	-	-	-	10,000		
					25,000	
<b>N.—ADMIRALTY, WHITEHALL:</b>						
General repairs to the public offices and official residences, also packing cases, and office furniture - - - { For details, see App. p. 200. }	-	-	-	-	8,000	
<b>O.—NAVAL COLLEGES:</b>						
GREENWICH:						
Works under 500 <i>l.</i> each - - - { For details, see App., pp. 198 }	-	-	-	340		
Repairs and maintenance of buildings { and 200. }	-	-	-	3,500		
<b>TOTAL GREENWICH - - -</b>	-	-	-	-	3,840	
Towards the erection of a College for Naval Cadets (including purchase of site) - - - { }	-	-	-	-	8,000	
<b>TOTAL NAVAL COLLEGES - - -</b>	-	-	-	-	11,840	
<b>P.—NAVAL ESTABLISHMENTS ABROAD:</b>						
GIBRALTAR						
Building masonry wharf, in connection with new mole - - - { }	90,000	-	-	10,000		80,000
Shed for additional steam-hammer furnace - - -	-	-	-	600		
Boiler makers' shop - - -	-	-	-	800		
Foundations for machinery - - -	-	-	-	1,070		
Other works under 500 <i>l.</i> each - - { For details, see App. pp. 199 }	-	-	-	920		
Repairs and maintenance of buildings { and 200. }	-	-	-	400		
<b>TOTAL Works and Buildings - - -</b>	-	-	-	13,790		
New machinery - - -	-	-	-	1,537		
Repairs to plant and machinery - - -	-	-	-	288		
<b>TOTAL Machinery - - -</b>	-	-	-	1,825		
<b>TOTAL GIBRALTAR - - -</b>	-	-	-	-	15,615	
Carried forward - - -				£.	440,016	

## Vote 11.—NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS—continued.

DESCRIPTION OF WORKS for each Establishment.	1.	2.	3.	4.		5.
	TOTAL ESTIMATE for the Work.	AMOUNT already Voted for it.	GROSS SUM already Expended upon it. (Posted to 31 Dec. 1876.)	VOTE REQUIRED for the ensuing Year, 1877-78.		Further ESTIMATE for completing the Work.
	£.	£.	£.	£.	£.	£.
Brought forward	-	-	-	-	440,016	
<b>P.—NAVAL ESTABLISHMENTS ABROAD—continued.</b>						
MALTA:						
New road through Burmola lines: to complete	-	-	-	*1,920		
Workshops in connection with Somerset Dock	22,000	3,000	2,234	1,230	-	18,500
Drainage	11,758†	10,000	1,080	*6,100		
Workshed between slip and mast stores	-	-	-	640		
Foundations for machinery	-	-	-	210		
Other works under 500 l. each	{ For details, see App., pp. 199 and 200. }		-	100		
Repairs and maintenance of buildings			-	1,600		
<b>TOTAL Works and Buildings</b>	-	-	-	11,800		
New machinery	-	-	-	820		
Repairs to plant and machinery	-	-	-	2,218		
Repairs and maintenance of caissons	-	-	-	100		
<b>TOTAL Machinery, &amp;c.</b>	-	-	-	3,138		
<b>TOTAL MALTA</b>	-	-	-	-	14,938	
BERMUDA:						
Dredging basin and harbour	-	-	-	4,500		
Cottages for workmen	-	-	-	500		
Foundations for machinery	-	-	-	700		
Other works under 500 l. each	{ For details, see App., pp. 199 and 200. }		-	940		
Repairs and maintenance of buildings			-	1,260		
Ditto - ditto - Floating Dock			-	2,500		
Pay of officers, crew, and artificers employed on works, &c., borne on the books of H.M.S. "Terror"	-	-	-	5,075		
<b>TOTAL Works and Buildings</b>	-	-	-	15,475		
New machinery	-	-	-	1,630		
Repairs to plant and machinery	-	-	-	1,233		
<b>TOTAL Machinery</b>	-	-	-	2,863		
<b>TOTAL BERMUDA</b>	-	-	-	-	18,338	
HALIFAX:						
Foundations for machinery	-	-	-	100		
Other works under 500 l. each	{ For details, see App., pp. 199 and 200. }		-	520		
Repairs and maintenance of buildings			-	2,200		
<b>TOTAL Works and Buildings</b>	-	-	-	2,820		
New machinery	-	-	-	183		
Repairs to plant and machinery	-	-	-	60		
<b>TOTAL Machinery</b>	-	-	-	243		
<b>TOTAL HALIFAX</b>	-	-	-	-	3,063	
Carried forward	-	-	-	£.	440,016	

\* Re-Votes.

† In addition to 5,879 l. to be contributed by the War Department.

Vote 11.—NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS—*continued.*

DESCRIPTION OF WORKS for each Establishment.	1.	2.	3.	4.		5.
	TOTAL ESTIMATE for the Work.	AMOUNT already Voted for it.	GROSS SUM already Expended upon it. (Posted to 31 Dec. 1876.)	VOTE REQUIRED for the ensuing Year, 1877-78.		Further ESTIMATE for completing the Work.
	£.	£.	£.	£.	£.	£.
Brought forward - - -	-	-	-	-	440,016	
P.—NAVAL ESTABLISHMENTS ABROAD— <i>continued.</i>						
JAMAICA:						
Repairs and maintenance of buildings { For details, see App., p. 200. }	-	-	-	990		
Repairs to plant and machinery - - -	-	-	-	80		
TOTAL JAMAICA - - -	-	-	-	-	1,050	
ANTIGUA:						
Repairs and maintenance of buildings { For details, see App., p. 200. }	-	-	-	-	240	
ASCENSION:						
Repairs and maintenance of buildings { For details, see App., p. 200. }	-	-	-	-	300	
ESQUIMALT, VANCOUVER'S ISLAND:						
Foundations for machinery - - -	-	-	-	90		
Repairs and maintenance of buildings { For details, see App., p. 200. }	-	-	-	930		
TOTAL Works and Buildings - - -	-	-	-	1,020		
Repairs to plant and machinery - - -	-	-	-	100		
TOTAL ESQUIMALT - - -	-	-	-	-	1,120	
CAPE OF GOOD HOPE:						
To complete the restoration and repairs of the build- ings in the yard - - -	-	-	-	5,000		
Repairs to plant and machinery - - -	-	-	-	115		
TOTAL CAPE OF GOOD HOPE - - -	-	-	-	-	5,115	
Carried forward - - -				£.	440,016	



Vote 11.—NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS—*continued.*

DESCRIPTION OF WORKS for each Establishment.	1.	2.	3.	4.		5.
	TOTAL ESTIMATE for the Work.	AMOUNT already Voted for it.	GROSS SUM already Expended upon it. (Posted to 31 Dec. 1876.)	VOTE REQUIRED for the ensuing Year, 1877-78.		Further ESTIMATE for completing the Work.
	£.	£.	£.	£.	£.	£.
Brought forward - - -	-	-	-	-	440,016	-
<b>P.—NAVAL ESTABLISHMENTS ABROAD—<i>continued.</i></b>						
TRINCOMALEE:						
Repairs and maintenance of buildings { For details, see App., p. 200. }	-	-	-	-	800	-
HONG KONG AND KOWLOON:						
Extension of pier - - -	-	-	-	1,160		
Factory buildings, to complete - - -	-	-	-	1,000		
Boundary wall and gates - - -	-	-	-	750		
Re-constructing sea wall - - -	-	-	-	850		
Foundations for machinery - - -	-	-	-	300		
Other works under 500 l. each - { For details, see App., pp. 199	-	-	-	500		
Repairs and maintenance of buildings { and 200. }	-	-	-	800		
TOTAL Works and Buildings - - -	-	-	-	5,360		
New machinery - - -	-	-	-	1,630		
Repairs to plant and machinery - - -	-	-	-	500		
TOTAL Machinery - - -	-	-	-	2,130		
TOTAL HONG KONG AND KOWLOON - - -	-	-	-	-	7,490	
SHANGHAI:						
Repairs and maintenance of buildings { For details, see App., p. 200. }	-	-	-	-	600	
TOTAL NAVAL ESTABLISHMENTS ABROAD - - -	-	-	-	-	68,669	
<b>Q.—VICTUALLING ESTABLISHMENTS ABROAD:</b>						
GIBRALTAR:						
Repairs and maintenance of buildings { For details, see App., p. 200. }	-	-	-	-	100	
MALTA:						
Works under 500 l. each - { For details, see App., pp. 199	-	-	-	140		
Repairs and maintenance of buildings { and 200. }	-	-	-	200		
HALIFAX:					340	
Works under 500 l. each - { For details, see App., pp. 199	-	-	-	350		
Repairs and maintenance of buildings { and 200. }	-	-	-	360		
CAPE OF GOOD HOPE:					710	
To complete the restoration and repairs of the build- ings - - -	-	-	-	-	1,000	
YOKOHAMA:						
Renewing sea wall - - -	-	-	-	2,850		
Repairs and maintenance of buildings { For details, see App., p. 200. }	-	-	-	200		
TOTAL VICTUALLING ESTABLISH- MENTS ABROAD - - -	-	-	-	-	3,050	
					5,200	
Carried forward - - -				£.	513,885	

Vote 11.—NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS—*continued.*

DESCRIPTION OF WORKS for each Establishment.	1.	2.	3.	4.		5.
	TOTAL	AMOUNT	GROSS SUM	VOTE REQUIRED		Further
	ESTIMATE for the Work.	already Voted for it.	already Expended upon it. (Posted to 31 Dec. 1876.)	for the ensuing Year, 1877-78.		ESTIMATE for completing the Work.
	£.	£.	£.	£.	£.	£.
Brought forward - - -	-	-	-	-	513,885	
<b>R.—MEDICAL ESTABLISHMENTS ABROAD:</b>						
LISBON:						
Repairs and maintenance of buildings { For details, see App., p. 200. }	-	-	-	-	60	
MALTA:						
Works under 500 l. each - - - { For details, see App., pp. 199	-	-	-	100		
Repairs and maintenance of buildings } and 200. }	-	-	-	1,000		
					1,100	
BERMUDA:						
Works under 500 l. each - - - { For details, see App., pp. 199	-	-	-	360		
Repairs and maintenance of buildings } and 200. }	-	-	-	400		
					760	
HALIFAX:						
Repairs and maintenance of buildings { For details, see App., p. 200. }	-	-	-	-	300	
JAMAICA:						
Repairs and maintenance of buildings { For details, see App., p. 200. }	-	-	-	-	450	
ESQUIMALT, VANCOUVER'S ISLAND:						
Repairs and maintenance of buildings { For details, see App., p. 200. }	-	-	-	-	600	
CAPE OF GOOD HOPE:						
To complete the restoration and repairs of the buildings - - - - - }	-	-	-	-	500	
HONG KONG:						
Renewal of water pipes - - - - - }	-	-	-	600		
Other works under 500 l. each - - { For details, see App., pp. 199	-	-	-	1,320		
Repairs and maintenance of buildings } and 200. }	-	-	-	490		
					2,410	
YOKOHAMA:						
Repairs and maintenance of buildings { For details, see App., p. 200. }	-	-	-	-	400	
TOTAL MEDICAL ESTABLISHMENTS } ABROAD - - - - - }	-	-	-	-	6,580	
<b>S.—CONTINGENCIES FOR WORKS AND BUILDINGS</b> - - - - - £. 10,000						
DITTO - MACHINERY - 3,000					13,250	
FREIGHT OF MACHINERY - 250						
<b>T.—TEMPORARY SUPERINTENDENCE</b> - - -					12,000	
TOTAL - - - - - £.					545,715	

Vote 11.—NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS—*continued.*

## A B S T R A C T.

	WORKS AND BUILDINGS.				MACHINERY, &c.		TOTAL.
	Under Superintendence of the Director of Works.				Under Superintendence of the Controller of the Navy.		
	<i>Extensions of the Dockyards and other Establishments.</i>	<i>Other Works and Buildings.</i>	<i>Repairs.</i>	<i>TOTAL.</i>	<i>Machinery.</i>	<i>Caissons.*</i>	
	£.	£.	£.	£.	£.	£.	£.
NAVAL YARDS AT HOME - - -	170,000	71,150	33,040	274,190	67,615	5,250	347,055
NAVAL YARDS ABROAD - - -	10,000	34,075	14,120	58,195	10,374	100	68,669
VICTUALLING YARDS AT HOME - -	—	1,970	4,350	6,320	3,470	—	9,790
VICTUALLING YARDS ABROAD - -	—	3,840	1,360	5,200	—	—	5,200
MEDICAL ESTABLISHMENTS AT HOME -	—	2,780	6,110	8,890	225	—	9,115
MEDICAL ESTABLISHMENTS ABROAD -	—	2,580	4,000	6,580	—	—	6,580
MARINE BARRACKS - - - -	—	9,980	9,030	19,010	45	—	19,055
BREAKWATERS - - - -	—	900	9,230	10,130	31	—	10,161
COAST GUARD BUILDINGS - - - -	—	15,000	10,000	25,000	—	—	25,000
ADMIRALTY OFFICES - - - -	—	—	8,000	8,000	—	—	8,000
NAVAL COLLEGES - - - -	8,000	340	3,500	11,840	—	—	11,840
CONTINGENCIES - - - -	—	10,000	—	10,000	3,250	—	13,250
TEMPORARY SUPERINTENDENCE - -	6,000	6,000	—	12,000	—	—	12,000
					85,010	5,350	
TOTAL FOR 1877-78 - - -	194,000	158,615	102,740	455,355	90,360		545,715
LAST VOTE FOR 1876-77 - - -	210,000	159,550	100,940	470,490	98,759		569,249
INCREASE - - - £.	—	—	1,800	—	—		—
DECREASE - - - £.	16,000	935	—	15,135	8,399		23,534

\* Provided under Works and Buildings in former years.



Vote 12.

MEDICINES AND MEDICAL STORES, &c.

I. ESTIMATE of the Sum which will be required in the Year ending 31st March 1878, to defray the EXPENSE of MEDICINES and MEDICAL STORES, &c. .

Seventy-eight Thousand and Ten Pounds.

II. SUB-HEADS under which this Vote will be accounted for.

	1877-78.	1876-77.	INCREASE.	DECREASE.	
	£.	£.	£.	£.	
A.—HOSPITAL AND INFIRMARY PROVISIONS AND STORES, MEDICINES, AND INSTRUMENTS - - - - -	56,180	55,130	1,050	—	
B.—SUBSISTENCE, &c., OF SEAMEN AT SICK QUARTERS, &c. -	12,180	11,500	680	—	
C.—EXPENSE OF CARRYING OUT CONTAGIOUS DISEASES ACT, &c.	15,000	15,000	—	—	
D.—MISCELLANEOUS DISBURSEMENTS, MEDICAL SERVICE - -	1,750	1,700	50	—	
£.	85,110	83,330	1,780	—	
Abate,—					
E.—CREDIT FOR MEN MAINTAINED AT THE EXPENSE OF GREENWICH HOSPITAL - - - - -	7,100	7,100	—	—	Actual Expenditure in 1875-76.
£.	78,010	76,230	1,780	—	£. 74,746

INCREASE - - - £. 1,780.

The amount provided for 1877-78 includes a sum of 200 l. transferred from Vote No. 1. The real increase is therefore 1,580 l.

Note.—The estimated amount of Old Stores and Extra Receipts relating to this Vote, to be paid into the Exchequer for the year 1877-78, is £. 620, included in total sum of £. 217,000, shown in Prefatory Statement of these Estimates, p. 3.

## VOTE 12.—MEDICINES AND MEDICAL STORES, &amp;c.—continued.

## DETAILS of the foregoing.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
<b>I.</b>		
<b>HOSPITAL AND INFIRMARY PROVISIONS AND STORES, MEDICINES, AND INSTRUMENTS:</b>	£.	£.
For Provisions and Stores of all kinds, including Issues from Naval and Victualling Depôts, and for Medicines, and for Surgical and Chemical Instruments and Appliances for the several Naval Hospitals and Marine Infirmaries, Sick Bays of Her Majesty's Ships, Temporary Hospitals, and Medical Depôts in charge of Naval Officers	56,180	55,180
<b>SUBSISTENCE, &amp;c., OF SEAMEN AT SICK QUARTERS, &amp;c., NOT IN CHARGE OF NAVAL OFFICERS:</b>		
For the Subsistence and Care of Seamen at Sick Quarters, and for other occasional Accommodation for the Sick:		
For the Fleet - - - - - £. 5,630		
For Coast Guard and Royal Naval Reserve - - - 6,550		
	12,180	11,500
<b>EXPENSE OF CARRYING OUT CONTAGIOUS DISEASES ACT, &amp;c.:</b>		
For the purpose of carrying out the Contagious Diseases Act of 1866; for Contributions for Lock Wards at the Out-Ports; and for Establishing and Maintaining Lock Beds at Naval Stations in the Colonies	* 15,000	* 15,000
<b>D.—MISCELLANEOUS DISBURSEMENTS, MEDICAL SERVICE:</b>		
For freight of Medical Stores, Funerals of Seamen, Sick Bay Washing, and other Miscellaneous Disbursements for Medical Service - - -	1,750	1,700
	85,110	83,330
Abate Credit, viz.,—		
<b>E.—Cost of Maintenance of Non-Commissioned Officers and Men of the Royal Navy and Marines, admitted to Naval Hospitals or Infirmaries, to be there maintained at the expense of Greenwich Hospital, in accordance with Clauses 4 and 6 of the Greenwich Hospital Act of 1869 - - - - -</b>	7,100	7,100
<b>TOTAL - - - £.</b>	78,010	76,230

\* In addition to Half or Retired Pay to Medical Officers at Southampton and Devonport, and inclusive of Full Pay of Fleet Surgeon at Yokohama, borne on the books of Her Majesty's Ship "Audacious." (See Appendix, No. 1, Explanatory Statement (A. 1), p. 162.)

Vote 13.

MARTIAL LAW AND LAW CHARGES.

I. ESTIMATE of the Sum which will be required in the Year ending 31st March 1878, to defray the EXPENSE of MARTIAL LAW and LAW CHARGES.

Eight Thousand One Hundred and Forty-seven Pounds.

II. SUB-HEADS under which this Vote will be accounted for.

	1877-78.	1876-77.	INCREASE.	DECREASE.	
	£.	£.	£.	£.	
A.—LEGAL DEPARTMENT - - - - -	138	7,738	—	7,600	
B.—COURTS MARTIAL - - - - -	2,200	2,000	200	—	
C.—NAVAL PRISON, LEWES - - - - -	3,350	3,339	11	—	
D.—NAVAL PRISONS, HONG KONG, BERMUDA, AND CAPE OF GOOD HOPE - - - - -	709	437	272	—	Actual Expenditure in 1875-76.
E.—CONVEYANCE OF PRISONERS - - - - -	1,750	1,600	150	—	
£.	8,147	15,114	638	7,600	£. 15,815

NET DECREASE - - - £. 6,967.

The Decrease is due to the transfer to the Treasury of the duties of Admiralty Solicitor, &c. There would otherwise have been an increase.

III. DETAILS of the above.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
A.—LEGAL DEPARTMENT:		
Advocate General of the Office of Lord High Admiral (in addition to Fees) - - - - -	£. 13	£. 13
Counsel and Judge Advocate for the affairs of the Admiralty and Navy (in addition to Fees) - - - - -	100	100
Acting Solicitor for the Admiralty - - - - -	—	800
Solicitor for assistance of Clerks - - - - -	—	1,300
Fees to Counsel, Charges of Law Agents, and Expenses attendant on the Purchase of Property, and other Legal Proceedings connected with Naval business, including a fixed allowance of 950 l. a year to the Admiralty Law Agent at Plymouth in lieu of Fees and Costs - - -	—	5,500
Crown Advocate at Malta (in addition to Fees) - - - - -	25	25
£.	138	7,738
B.—COURTS MARTIAL:		
Allowances to persons officiating at Courts Martial on Officers, Seamen, and Marines, and at Coastguard Courts of Enquiry, Travelling Charges, and other Expenses attendant thereon - - - - -	2,200	2,000



VOTE 18.—MARTIAL LAW AND LAW CHARGES—*continued.*

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
<b>C.—NAVAL PRISON, LEWES:</b>	£.	£.
Governor,* † from 350 £. to 400 £. per annum - - - - -	400	400
Compensation to ditto for payment of House Duty - - - - -	3	3
Chaplain* - - - - -	200	200
Allowance to ditto in lieu of a House - - - - -	50	50
Allowance to Roman Catholic Priest - - - - -	26	26
Local Medical Practitioner - - - - -	100	100
Pay of Warders, Assistant Warders, Schoolmaster, Messengers, &c. - -	1,445	1,447
Lodging Money to those of the above unprovided with Quarters - -	164	164
Clothing for Warders, and Allowances in lieu - - - - -	110	101
Water - - - - -	12	8
Gas - - - - -	70	70
Fuel, Miscellaneous Stores, &c. - - - - -	350	350
Postage, Advertisements, and other Contingencies - - - - -	120	120
Clothing for Prisoners - - - - -	300	300
£.	3,350	3,339
<b>D.—NAVAL PRISONS, HONG KONG, BERMUDA, AND CAPE OF GOOD HOPE:</b>		
<b>HONG KONG:</b>		
Wages of Master-at-Arms and three Ship's Corporals of Her Majesty's Ship "Victor Emanuel" ‡ - - - - -	237	237
<b>BERMUDA:</b>		
Wages of a Serjeant, Royal Marines, and of two Ship's Corporals, borne on books of Her Majesty's Ship "Terror" ‡ - - - - -	149	149
Extra Pay to Serjeant for acting as Chief Warder - - - - -	36	36
<b>CAPE OF GOOD HOPE:</b>		
Wages of three Ship's Corporals, a Master at Arms, and a Third Class Domestic, borne on Books of Her Majesty's Ship "Flora" - - -	257	{ Provided for under Vote No. 1. 15
Clothing for Prisoners, and Contingencies for the above Establishments -	30	
£.	709	437
<b>E.—CONVEYANCE OF PRISONERS:</b>		
Expense of conveying Prisoners between Lewes Prison and County Gaols, } and Her Majesty's Ships - - - - -	1,750	1,600

\* In addition to Retired Pay.

† In occupation of an Official Residence.

‡ See Statement of Transfers from Vote No. 1, Appendix (A.) 1, page 162.

## VOTE 14.

## MISCELLANEOUS SERVICES.

I. ESTIMATE of the Sum which will be required in the Year ending 31st March 1878, to defray the EXPENSE of various MISCELLANEOUS SERVICES.

One Hundred and Thirty Thousand One Hundred and Thirty-four Pounds.

II. SUB-HEADS under which this VOTE will be accounted for.

	1877-78.	1876-77.	INCREASE.	DECREASE.
	£.	£.	£.	£.
A.—PILOTING AND TOWING HER MAJESTY'S SHIPS - - -	10,000	10,000	—	—
B.—COMMANDERS IN CHIEF, EXPENSES ATTENDANT ON - -	4,500	4,400	100	—
C.—PASSAGE MONEY AND CONVEYANCE OF OFFICERS, SEAMEN, MARINES, &c. - - - - -	60,000	60,000	—	—
D.—TELEGRAPHIC COMMUNICATIONS, EXPENSE OF - - -	3,500	3,500	—	—
E.—COMPENSATION TO OFFICERS, &c., FOR LOSSES BY SHIP- WRECK, &c. - - - - -	1,000	1,000	—	—
F.—CONTRIBUTIONS IN AID OF SAILORS' HOMES - - - -	600	600	—	—
G.—DITTO - - - - - RELIGIOUS AND CHARITABLE INSTITUTIONS - - - - -	1,400	1,400	—	—
H.—ALLOWANCES TO MINISTERS OF RELIGION, &c. - - -	3,200	3,200	—	—
I.—PER-CENTAGE TO BANKS, &c. - - - - -	2,200	2,000	200	—
J.—MAINTENANCE OF A FLOATING LIGHTVESSEL AT THE WARNER - - - - -	370	370	—	—
K.—MEDALS FOR SEAMEN AND MARINES, &c. - - - -	700	800	—	100
L.—REWARDS FOR SERVICES AGAINST PIRATES - - - -	—	700	—	700
M.—STAMPS ON CONTRACTS AND ON OFFICERS' COMMISSIONS, &c.	2,200	1,800	400	—
N.—ASSISTANCE RENDERED TO HER MAJESTY'S SHIPS WHEN IN DISTRESS - - - - -	500	500	—	—
O.—COMPENSATION FOR DAMAGE DONE BY HER MAJESTY'S SHIPS - - - - -	3,000	2,000	1,000	—
P.—GRATUITIES FOR SPECIAL SERVICES - - - - -	1,000	1,000	—	—
Q.—EXPENSE OF COMMITTEES - - - - -	4,000	2,500	1,500	—
R.—ALLOWANCES FOR STATIONERY, &c., HER MAJESTY'S SHIPS	2,800	2,600	200	—
S.—LOSS BY EXCHANGE, &c. - - - - -	300	300	—	—
T.—LODGING ALLOWANCES TO OFFICERS, &c., OF HER MA- JESTY'S SHIPS - - - - -	4,500	4,000	500	—
U.—WATER POLICE - - - - -	4,432	4,445	—	13
V.—TORPEDO EXPERIMENTS - - - - -	4,000	4,000	—	—
W.—NAVAL ATTACHÉS TO BRITISH EMBASSIES ABROAD - -	1,800	1,800	—	—
X.—INTEREST ON NAVAL SAVINGS BANK DEPOSITS - - -	1,050	750	300	—
XX.—COMMUNICATION WITH THE ARCTIC EXPEDITION BY MR. ALLEN YOUNG - - - - -	—	8,000	—	8,000
XXX.—WORKS FOR DRAINAGE AND WATER SUPPLY AT GIBRALTAR	382*	382	—	—
Y.—BOYS IN TRAINING SHIPS, MISCELLANEOUS EXPENSES OF -	2,200	2,300	—	100
YY.—ALLOWANCES IN AID OF BAND EXPENSES - - - -	500	500	—	—
Z.—MISCELLANEOUS PAYMENTS AND ALLOWANCES - - -	10,000	10,700	—	700
£.	130,134	135,547	4,200	9,613
NET DECREASE - - - £. 5,413.				
				Actual Expenditure in 1875-76. £. 203,530

Note.—The Estimated Amount of Extra Receipts relating to this Vote to be paid into the Exchequer for the Year 1877-78, is £. 15,800, included in total sum of £. 217,000, shown in Prefatory Statement of these Estimates, p. 3.

\* A Re-vote.

VOTE 14.—MISCELLANEOUS SERVICES—*continued.*

## III. DETAILS of the foregoing.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
<b>A.—PILOTING AND TOWING HER MAJESTY'S SHIPS:</b>		
For Pilotage of Her Majesty's Ships on Home and Foreign Stations; and Travelling and other incidental Expenses in piloting and towing Ships (including Tolls for Passage of Suez Canal) - - - -	£. 10,000	£. 10,000
<b>B.—COMMANDERS IN CHIEF:</b>		
For Rents, Furniture, Postage, Stationery Allowances, Wages of Attendants,* and other Expenses - - - - -	4,500	4,400
<b>C.—PASSAGE MONEY AND CONVEYANCE OF OFFICERS, SEAMEN, MARINES, &amp;c.:</b>		
For the Passage and Travelling Expenses of Naval and Marine Officers proceeding to, and of Invalid Officers returning from, their Ships on Foreign Stations; and of Civil Officers and Artificers proceeding to, and returning from, Service Abroad; also for the Conveyance of Seamen and Marines to and from their Ships or Divisions; and for the Passage and Conveyance of Invalids - - - - -	60,000	60,000
<b>D.—TELEGRAPHIC COMMUNICATIONS:</b>		
For casual Telegraphic Communications, &c. - - - - -	3,500	3,500
<b>E.—COMPENSATION TO OFFICERS, &amp;c. FOR LOSSES BY SHIPWRECK, &amp;c.:</b>		
For Compensation to Officers, Seamen, &c. for Losses by Shipwreck or Action, pursuant to the Recommendation of the Committee for Naval and Military Inquiry - - - - -	1,000	1,000
<b>F.—CONTRIBUTIONS IN AID OF SAILORS' HOMES:</b>		
For Contributions in aid of Sailors' Homes in the Neighbourhood of Naval Establishments - - - - -	600	600
<b>G.—CONTRIBUTIONS IN AID OF RELIGIOUS AND CHARITABLE INSTITUTIONS:</b>		
For Contributions in aid of Religious and Charitable Institutions in the Neighbourhood of Naval Establishments - - - - -	1,400	1,400
<b>H.—ALLOWANCES TO MINISTERS OF RELIGION, &amp;c.:</b>		
For Allowances to Ministers of Religion for Services to Seamen and Marines in Her Majesty's Ships, and at Establishments on Shore at Home and Abroad, and for Accommodation in Churches, Chapels, &c., not including Naval Chaplains attached to Establishments -	3,200	3,200
<b>I.—PER-CENTAGE TO BANKS, &amp;c.:</b>		
For Per-centage paid to Banks for transmission of Money to the Naval Accountants at the Out-ports and other Home Establishments, to meet Payments for the Naval Department; for the Payment of Allotments by Local Postmasters; for Commission on Post Office Orders for the Remittance of Private Cash; and for Per-centage to Colonial Governments, &c. for Payments for Navy Services Abroad	2,200	2,000
Carried forward - - - £.	86,400	86,100

\* Inclusive of Wages of Men borne on the books of Her Majesty's Ship "Flora," at the Cape of Good Hope; Her Majesty's Ship "Terror," at Bermuda; and of Her Majesty's Ship "Bellerophon," at Halifax. (See App. No. 1, Explanatory Statement, A. 1, p. 162.)



VOTE 14.—MISCELLANEOUS SERVICES—*continued.*

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
	£.	£.
Brought forward - - -	86,400	86,100
J.—MAINTENANCE OF A FLOATING LIGHTVESSEL AT THE WARNER:		
For Annual Payment to the Elder Brethren of the Trinity House for the maintenance of a Floating Lightvessel at the Warner - -	370	370
K.—MEDALS FOR SEAMEN AND MARINES, &c.:		
For War Medals to Seamen and Marines and Medals for Good Conduct, Meritorious Service, Conspicuous Gallantry in Action, and for the Arctic Expedition, &c. - - - - -	700	800
L.—REWARDS FOR SERVICES AGAINST PIRATES:		
For Award to the Officers and Crew of Her Majesty's Ship "Algerine," for Services against Pirates at the Tongva Islands - - - - -	—	700
M.—STAMPS ON CONTRACTS, &c.:		
For Stamps on Contracts, and on Officers' Commissions and Appoint- ments, Advertisements, Gazettes, Lists, &c. - - - - -	2,200	1,800
N.—ASSISTANCE RENDERED TO HER MAJESTY'S SHIPS, &c.:		
For Assistance rendered to Her Majesty's Ships in Distress - -	500	500
O.—COMPENSATION FOR DAMAGE DONE BY HER MAJESTY'S SHIPS:		
For Remuneration for Damage done by Her Majesty's Ships - -	3,000	2,000
P.—GRATUITIES FOR SPECIAL SERVICES:		
For Compassionate Allowances, and Gratuities for Special Services -	1,000	1,000
Q.—EXPENSE OF COMMITTEES:		
For Expenses connected with the Appointment of Committees to in- vestigate or report on Matters relating to the Naval Department - -	4,000	2,500
R.—ALLOWANCES FOR STATIONERY, &c., HER MAJESTY'S SHIPS:		
For Allowances to purchase Stationery for Captains and Paymasters of Her Majesty's Ships; for Allowances, &c., for the purchase of Books and Stationery for Schools on board Her Majesty's Ships; and for Carriage of Stationery, &c. - - - - -	2,800	2,600
S.—LOSS BY EXCHANGE, &c.:		
For Net Loss by Exchange incurred from Payments made by Paymasters on the East India and China Stations, &c.; and Discount on Bills drawn - - - - -	300	300
T.—LODGING ALLOWANCES TO OFFICERS, &c., OF HER MAJESTY'S SHIPS:		
For Allowances for Lodging to Officers and Crews of Her Majesty's Ships detained on Shore by Stress of Weather, or on Special Service	4,500	4,000
Carried forward, - - - £.	105,770	102,670

VOTE 14.—MISCELLANEOUS SERVICES—*continued.*

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
	£.	£.
<b>U.—WATER POLICE:</b>		
Brought forward - - -	105,770	102,670
For the Wages of the Metropolitan Police Force employed on the Water Police Service at the undermentioned Naval Stations, under Act 23 & 24 Vict. c. 185, including Commuted Allowance for Clothing, Fuel, and Contingent Expenses; viz.:—		
Chatham - - - - -	529	
Sheerness - - - - -	693	
Portsmouth - - - - -	1,804	
Devonport (including Rent of Premises under St. George's Hall for detention of disorderly Seamen) - - - - -	1,406	
	4,432	4,445
<b>V.—TORPEDO EXPERIMENTS:</b>		
For Expenses incidental to carrying out Experiments with Torpedoes	4,000	4,000
<b>W.—NAVAL ATTACHÉS TO BRITISH EMBASSIES ABROAD:</b>		
For Salary, Allowances, and Travelling Expenses of Naval Attachés* at the Maritime Courts of Europe and at Washington, U. S. - - -	1,800	1,800
<b>X.—INTEREST ON NAVAL SAVINGS BANK DEPOSITS:</b>		
For Interest to Depositors in Naval Savings Bank, in excess of income derived from the investment of Deposits - - - - -	1,050	750
<b>XX.—COMMUNICATION WITH THE ARCTIC EXPEDITION BY MR. ALLEN YOUNG:</b>		
For Expenses that may be incurred by Mr. Allen Young in his attempt to convey Despatches to, and bring home information of, the Arctic Expedition, in the Season of 1876 - - - - -	—	8,000
<b>XXX.—WORKS FOR DRAINAGE AND WATER SUPPLY AT GIBRALTAR:</b>		
For Balance of increased Contribution towards the Works - - - - -	382 †	382
<b>Y.—BOYS IN TRAINING SHIPS, MISCELLANEOUS EXPENSES OF:</b>		
For expenses specially incurred for the Boys, including extra Fittings for Messes, &c., Repairs to Clothes, Band Charges, Rewards, Amusements, Lodging at Sailors' Homes, &c. - - - - -	2,200	2,300
<b>YY.—ALLOWANCES IN AID OF BAND EXPENSES:</b>		
For Allowances to Flag Officers and Commanding Officers of Ships that are allowed Bands - - - - -	500	500
<b>Z.—MISCELLANEOUS PAYMENTS AND ALLOWANCES:</b>		
For Conveyance by Sea of the Royal Household; Entertainment of Royal Personages; Travelling and other Expenses of Naval Officers, &c. employed on Special Services; Rents of Property unconnected with Establishments; Conveyance, &c. of Naval Ordnance Stores; Wages of hired Interpreters; Signalmen, Lightkeepers, &c.; occasional Hire of Steamers and other small Vessels, Boats, &c.; Freight of Specie; Postages by Captains, &c.; and other small or unforeseen Expenses -	10,000	10,700
(For Details of Expenditure of Contingencies in 1875-76, see Appendix, No. 21, p. 202.)		
<b>TOTAL - - - £.</b>	130,134	135,547

\* In addition to Half Pay, R. N.

† A Re-vote.

## Vote 15.

### HALF PAY, RESERVED HALF PAY, AND RETIREMENT TO OFFICERS OF THE NAVY AND ROYAL MARINES.

**I. ESTIMATE** of the Sum which will be required in the Year ending 31st March 1878, to defray the Expense of HALF PAY, RESERVED and RETIRED PAY.

Eight Hundred and Eighty Thousand Seven Hundred and Ninety-six Pounds.

**II.** SUB-HEADS under which this Vote will be accounted for.

	1877-78.	1876-77.	INCREASE.	DECREASE.	
	£.	£.	£.	£.	
A.—HALF PAY, RESERVED AND RETIRED PAY -	746,341	763,463	—	17,122	
B.—COMMUTATION OF RETIRED PAY - - -	134,455	125,009	9,446	—	Actual Expenditure in 1876-77.
£.	880,796	888,472	9,446	17,122	£. 881,171
NET DECREASE - - £. 7,676.					

**III.** DETAILS of the above.

Numbers.			REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
1 Jan. 1877.	1 Jan. 1876.		£.	£.
<b>A.—HALF-PAY, RESERVED HALF-PAY, AND RETIREMENT:</b>				
560	607	ACTIVE LIST of NAVAL OFFICERS - - - - -	113,364*	116,920
166	180	RESERVED LIST of - - Ditto - - - - -	39,789*	44,133
2,095	2,175	RETIRED LIST of - - - Ditto - - - - -	550,071*	561,533
204	206	Ditto - - - of MARINE OFFICERS - - - - -	60,117*	53,877
3,025	3,168	£.	763,341	776,463
<i>To provide for an extra day's pay on account of Leap Year, payable after 31 March 1876</i>			—	2,000
Deduct estimated Decrease under above Heads, from Deaths, &c., occurring throughout the year, less the estimated expense of Retirements in the same period - -			763,341 17,000	778,463 15,000
<b>B.—COMMUTATION OF RETIRED PAY:</b>			746,341	763,463
To provide for the payment to the Commissioners for the Reduction of the National Debt of a Terminable Annuity, sufficient to repay them at the expiration of 10 years, the amount advanced, together with Interest thereon, at the rate of Three and a half per centum per annum in respect of retired pay commuted, under the authority of the "Pensions Commutation Acts," 1869 and 1871 - - - - -			1870 - £24,516 - - 1871 - 20,287 - - 1872 - 20,644 - - 1873 - 21,596 - - 1874 - 25,561 - - 1875 - 12,405 - - 1876 - 9,446 - -	194,455 125,009
TOTAL - - - £.			880,796	888,472

\* For Details of above, see Appendix, No. 22, page 203.



## Vote 16.

## MILITARY AND CIVIL PENSIONS AND ALLOWANCES.

I. ESTIMATE of the Sum which will be required in the Year ending 31st March 1878, to defray the Expense of MILITARY and CIVIL PENSIONS and ALLOWANCES.

SECTION 1.—Seven Hundred and Fifty-nine Thousand Nine Hundred and Forty Pounds.

SECTION 2.—Two Hundred and Seventy-nine Thousand Nine Hundred and Eighty-one Pounds.

II. SUB-HEADS under which this Vote will be accounted for.

	1877-78.	1876-77.	INCREASE.	DECREASE.	
SECTION 1.—MILITARY PENSIONS.					
A.—PENSIONS FOR GOOD AND MERITORIOUS SERVICES - - -	7,400	£. 7,500	£. —	£. 100	
B.— DITTO FOR CONSPICUOUS BRAVERY - - - - -	240	240	—	—	
C.—FLAG OFFICERS' RETIRED SERVICE PENSIONS - - - -	300	300	—	—	
D.—PENSIONS AND GRATUITIES FOR WOUNDS AND INJURIES } RECEIVED IN THE SERVICE - - - - - }	8,265	9,207	—	942	
E.—PENSIONS TO ENGINEERS, WARRANT OFFICERS, &c. - -	71,073	59,051	12,022	—	
F.— DITTO - TO WIDOWS AND RELATIVES OF OFFICERS SLAIN, &c.	13,375	13,150	225	—	
G.— DITTO - WIDOWS OF NAVAL OFFICERS - - - - -	131,972	130,854	1,118	—	
H.— DITTO - DITTO - - MARINE OFFICERS - - - - -	8,898	8,880	18	—	
I.—COMPASSIONATE LIST - - - - -	18,500	18,500	—	—	
K.—COMPENSATION ALLOWANCES TO LIEUTENANTS, LATE OF } NAVAL HOSPITALS, ON LOSS OF APPOINTMENTS - - }	265	265	—	—	
L.—PENSIONS TO OLD AND DISABLED COMMISSIONED OFFICERS	5,025	5,025	—	—	
M.— DITTO - AND GRATUITIES TO SEAMEN AND MARINES -	481,535	462,286	19,249	—	
N.—COMPASSIONATE ALLOWANCES TO LATE OFFICERS OF THE } NAVY AND ROYAL MARINES - - - - - }	1,000	-	1,000	—	Actual Expenditure in 1875-76.
O.—COMMUTATION OF MILITARY PENSIONS - - - - -	12,092	10,878	1,214	—	£.
£.	759,940	726,136	34,846	1,042	703,855

NET INCREASE - - - £. 33,804.

Note.—The estimated amount of Extra Receipts relating to this Vote to be paid into the Exchequer for the Year 1877-78 is 2,000 £., included in the total sum of 217,000 £. shown in Prefatory Statement of these Estimates, page 3.

## SECTION 2.—CIVIL PENSIONS.

A.—PENSIONS, CIVIL, SALARIED OFFICERS - - - - -	85,595	85,184	411	—	
B.— DITTO - - ARTIFICERS, &c. - - - - -	122,296	120,434	1,862	—	
C.— DITTO - - COAST GUARD - - - - -	50,216	55,283	—	5,067	
D.—GRATUITIES TO PERSONS ON RETIREMENT OR DISCHARGE, &c.	1,500	1,400	100	—	
E.—CONTRIBUTION IN AID OF A PENSION FUND FOR THE } METROPOLITAN POLICE, &c. - - - - - }	2,673	2,550	123	—	Actual Expenditure in 1875-76.
F.—COMMUTATION OF CIVIL PENSIONS - - - - -	17,701	17,325	376	—	£.
£.	279,981	282,176	2,872	5,067	284,423

NET DECREASE - - - £. 2,195.

VOTE 16.—MILITARY AND CIVIL PENSIONS AND ALLOWANCES—*continued.*

## III.

## DETAILS of the foregoing.

## (SECTION 1.)—MILITARY PENSIONS AND ALLOWANCES.

				REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.	
				£.	£.	
A.—PENSIONS FOR GOOD AND MERITORIOUS SERVICES.						
Granted in pursuance of an Order in Council, dated 12th July 1837, founded on the Recommendation contained in the Report of the Select Committee of the House of Commons on Army and Navy Appointments, dated 12th August 1833, and Order in Council of 22nd February 1870.						
				ESTIMATES on which the Services were stated.		
FLAG OFFICERS.						
Admiral Sir W. F. Martin, Bart., G. C. B.	-	-	-	1864-65 p. 77	300	300
Sir Michael Seymour, G. C. B.	-	-	-	1868-69 p. 124	300	300
Hon. Sir F. W. Grey, G. C. B.	-	-	-	1870-71 p. 128	300	300
Sir Charles Talbot, K.C.B.	-	-	-	1870-71 p. 128	—	300
Sir L. T. Jones, K. C. B.	-	-	-	1870-71 p. 128	300	300
Sir G. R. Mundy, K. C. B., D. C. L., F. R. S.	-	-	-	1871-72 p. 127	300	300
Sir T. M. C. Symonds, K. C. B.	-	-	-	1871-72 p. 127	300	300
Vice Admiral Hon. Sir J. R. Drummond, K. C. B.	-	-	-	1871-72 p. 127	300	300
Admiral Hon. Sir Henry Keppel, G. C. B.	-	-	-	1871-72 p. 128	300	300
Vice Admiral Sir J. W. Tarleton, K. C. B.	-	-	-	1871-72 p. 128	300	300
Admiral Sir H. J. Codrington, K. C. B.	-	-	-	1873-74 p. 122	300	300
Sir Augustus Leopold Kuper, G. C. B.	-	-	-	1875-76 p. 127	300	300
CAPTAINS.						
Captain Charles Fellowes, C.B.	-	-	-	1871-72 p. 132	—	150
Hon. F. A. C. Foley	-	-	-	1872-73 p. 124	—	150
W. G. Jones	-	-	-	1873-74 p. 122	150	150
C. M. Aynsley, C.B.	-	-	-	1874-75 p. 125	—	150
Charles Wake	-	-	-	1875-76 p. 127	—	150
Sir W. N. W. Hewett, V. C., K. C. B.	-	-	-	1875-76 p. 127	150	150
R. V. Hamilton, C.B.	-	-	-	1875-76 p. 128	150	150
J. E. Parish	-	-	-	1876-77 p. 134	—	150
D. Spain	-	-	-	1876-77 p. 134	150	150
T. B. Lethbridge	-	-	-	1876-77 p. 134	150	150
C. L. Waddilove	-	-	-	1876-77 p. 134	150	150
W. Graham	-	-	-	1876-77 p. 135	150	150
MARINE OFFICERS.						
General Henry J. Delacombe, C. B.	-	-	-	1868-69 p. 127	300	300
Sir F. Graham, K. C. B.	-	-	-	1871-72 p. 133	200	200
J. T. Brown Greive, C. B.	-	-	-	1871-72 p. 134	200	200
[Sir A. B. Stransham, K. C. B.]	-	-	-	1871-72 p. 134	200	200
Alexander Anderson, C. B.	-	-	-	1871-72 p. 135	200	200
Colonel Commandant P. C. Penrose, C.B.	-	-	-	1876-77 p. 136	150	150
General J. H. Gascoigne, C.B.	-	-	-	1876-77 p. 136	200	200
Colonel Second Commandant G. S. Digby, C.B.	-	-	-	1876-77 p. 137	150	150
MEDICAL OFFICERS.						
Inspector General Sir David Deas, K.C.B., M.D.	-	-	-	1870-71 p. 131	—	100
George Burn, C. B., M. D.	-	-	-	1870-71 p. 131	100	100
J. W. Johnston, M. D.	-	-	-	1872-73 p. 125	100	100
John Rees, C.B., M. D.	-	-	-	1874-75 p. 126	100	100
James Salmon, M. D.	-	-	-	1875-76 p. 128	100	100
Carried forward				£.	6,350	7,500

VOTE 16 (SECTION 1).—MILITARY PENSIONS AND ALLOWANCES—*continued*.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
<b>A.—PENSIONS FOR GOOD AND MERITORIOUS SERVICES—<i>continued</i>.</b>	<b>£.</b>	<b>£.</b>
Brought forward - - -	6,350	7,500
Pensions Granted within the Year 1876-77, subsequently to the preparation of the Estimates.		
<b>FLAG OFFICERS.</b>		
Admiral Sir GEORGE ST. VINCENT KING, K.C.B. - - - - -	300	—
Entered the Navy - - - - - 8 February 1822		
Lieutenant - - - - - 15 January 1830		
Commander - - - - - 8 August 1834		
Captain - - - - - 28 August 1841		
Rear-Admiral - - - - - 4 April 1862		
Vice-Admiral - - - - - 20 March 1867		
Admiral - - - - - 20 April 1875		
As Captain served in command of H.M.S. "Leander," "Rodney," and "St. Jean d'Acre," on the Mediterranean station, from June 1852 to 7th November 1856, and of the "Princess Charlotte," on the East India and China Station, from the 23rd April 1857 to 18th April 1858.		
While Captain of the "Leander" was mentioned in Gazette (5 November 1854) as present at defence of Eupatoria, and was mentioned in high terms in Despatches for his services on that occasion.		
While Captain of the "Rodney" he served in the trenches before Sebastopol from 14th April 1855 to 9th July 1855, and was awarded the Companionship of the Bath for such services in July 1855. In December 1856 he was appointed Naval Aide-de-Camp to the Queen.		
As flag officer he served as Commander-in-Chief on the East India Station from February 1864 to 17th January 1865, when he was transferred to the command of the China station, with temporary rank as Vice-Admiral; he continued in command of that station until 1867, striking his flag on the 31st July of that year, and receiving the expression of the satisfaction of the Board at the manner in which he had conducted the duties of so extensive a station.		
Sir George King was advanced to be Knight Commander of the Bath in May 1873, and also holds the Legion of Honour and the 3rd Class of the Order of the Medjidie for his war services.		
He has upwards of 21 years' service as a Commissioned Officer.		
<b>CAPTAINS.</b>		
Captain GEORGE AUGUSTUS COOKE BROOKER - - - - -	150	—
Entered - - - - - 22 May 1846		
Lieutenant - - - - - 11 June 1852		
Commander - - - - - 9 January 1856		
Captain - - - - - 15 April 1862		
In April 1852, while Mate of H.M.S. "Superb," the Commander of that ship reported him to the Board with the highest praise for his conduct and abilities.		
In June 1852 he was specially promoted to the rank of Lieutenant, on account of the creditable examination he had passed at the Royal Naval College.		
In March 1855, while Lieutenant of the "Bittern," Rear-Admiral Sir James Stirling reported his very creditable conduct while engaged in the Suppression of Piracy. On the 11th January 1856, he was Gazetted for gallantry in operations against Chinese pirates, and was specially promoted to the rank of Commander for such services, with seniority of the 9th January 1856.		
While Commander of the "Inflexible" was Gazetted (16 February 1858) as taking part with Naval Brigade in assault on and capture of Canton, and was again Gazetted with high praise, for his services at the destruction of a Chinese piratical fleet.		
As Captain has served in command of H.M.S. "Wivern" from the 22nd October 1867 to the 26th August 1868, of the "Scorpion" from the 26th August 1868 to the 31st December 1869, and of the "Egmont" (Receiving and Storeship at Rio) from the 25th July 1871 to the 31st December 1874.		
Captain Brooker has upwards of 19 years' service as Commissioned Officer.		
Carried forward - - - £.	6,800	7,500



VOTE 16 (SECTION 1).--MILITARY PENSIONS AND ALLOWANCES--continued.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
A.--PENSIONS FOR GOOD AND MERITORIOUS SERVICES--continued.		
Brought forward - - -	£. 6,800	£. 7,500
Captain JOHN BYTHESEA, V.C. - - - - -	150	—
Entered - - - - - December 1841		
Lieutenant - - - - - 12 June 1849		
Commander - - - - - 10 May 1856		
Captain - - - - - 15 May 1861		
<p>In January 1856, when Lieutenant in command of "Locust" (Baltic), Rear Admiral Sir Charles Napier reported a gallant and successful secret service performed by him in seizing the enemy's mail bags; for this service he was awarded the Victoria Cross (<i>vide</i> Gazette of 24 February 1857), and specially promoted to the rank of Commander. In January 1859, when Commander of the "Cruizer," Rear Admiral Sir M. Seymour reported his zeal and ability in releasing the "Furious" and "Cruizer" from the Yang-tse-Kiang.</p> <p>In December 1859 he was thanked by the French Government for services rendered by him during services at Ning-po, and in January 1861 Rear Admiral Sir James Hope reported the zeal and ability displayed by him as Commander of the "Cruizer," in the survey of the Gulf of Lia-tung.</p> <p>In February 1862 he was selected by the Board to sit on the Commission for enquiring into the state of the Defences of British North America, and in December 1862 the Board expressed their satisfaction at the care and ability with which he had drawn up the Report on the Naval Yards, &amp;c. of the United States.</p> <p>In April 1865 he was appointed Naval Attaché at Washington, and received the thanks of their Lordships in June 1866 for the very satisfactory manner in which he had performed the duties of that appointment.</p> <p>As Captain he served in command of H.M.S. "Phoebe" from May 1867 to November 1870, and of H.M.S. "Lord Clyde" from September 1871 to 26 May 1872.</p> <p>In November 1873 he was appointed Consulting Naval Officer for the Marine Department of the Government of India, which appointment he still holds.</p> <p>Captain Bythesea has about 23 years' service as a Commissioned Officer.</p>		
Captain JOHN DOBREE MCCREA - - - - -	150	—
Entered - - - - - August 1842		
Lieutenant - - - - - 2 September 1850		
Commander - - - - - 10 May 1856		
Captain - - - - - 15 April 1862		
<p>While Midshipman of "Iris" was Gazetted for services in Borneo (Bruné).</p> <p>On the 10th November 1853, while Lieutenant of "Alecto," Rear Admiral Bruce reports his very creditable conduct in an expedition against Kosoko, late Chief of Lagos.</p> <p>On the 28th March 1854, Captain Kitchen reports the destruction of a slave vessel by Lieutenant McCrea.</p> <p>In August 1854 while Lieutenant of "Penelope," was mentioned in Despatches by Sir C. Napier as a most zealous and deserving officer, and was praised for conduct at Bomersund.</p> <p>On the 20th August 1855, while Lieutenant of the "Hastings," was Gazetted as having been engaged in rocket boats at bombardment of Sweaborg, and on the 10th May 1856 he was promoted to Commander by the Board for such services.</p> <p>As Captain has served in command of "Favorite" (November 1867 to August 1869); "Prince Consort" (February 1871 to November 1871); "Bellerophon," (November 1871 to March 1873), and "Triumph" from March 1873 to 1 January 1874, when he was appointed Senior Officer at Gibraltar, which appointment he still holds.</p> <p>Captain McCrea has upwards of 25 years' service as a Commissioned Officer.</p>		
Carried forward - - - £.	7,100	7,500

VOTE 16 (SECTION 1).—MILITARY PENSIONS AND ALLOWANCES—*continued.*A.—PENSIONS FOR GOOD AND MERITORIOUS SERVICES—*continued.*

Brought forward - - -

REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
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£.	£.
7,100	7,500

## CAPTAIN NORMAN BERNARD BEDINGFELD - - - - -

Entered - - - - -	June 1839
Lieutenant - - - - -	16 November 1846
Commander - - - - -	30 August 1856
Captain - - - - -	15 April 1862

150

—

Specially promoted to the rank of Lieutenant for services while Acting Mate of the "Dolphin," on the South-east Coast of America.

In April 1851, Commodore Fanshawe reports his good conduct while in temporary command of "Jackal," at the destruction of an African town in the River Benin.

In March 1854, Lord Clarendon reports his most judicious and praiseworthy conduct in endeavouring to establish peace between Lagos and Eppé, while Lieutenant in command of "Pluto."

In January 1862, while Commander of the "Prometheus," Commodore Edmonstone bore the strongest testimony to his unceasing exertions, zealous conduct, and valuable services under very trying circumstances at Lagos; and the Foreign Office further expressed approval of his services on that occasion.

In October 1867, while Captain of the "Wasp," he gained the approval of the Colonial Office for the assistance rendered by him at Terang during a Chinese riot; and in December 1867, he received the approval of the Board for services in suppressing piracy at Nicobar Islands.

As Captain, has served in command of H.M.S. "Wasp," "Gladiator" (senior officer on South-east Coast of America), "Valiant," and "Favourite," and is at present in command of H.M.S. "Lord Warden," First Reserve Ship at Queensferry, N.B.

Captain Bedingfeld has upwards of 27 years' service as a commissioned officer.

## CAPTAIN JOHN CLARK SOADY - - - - -

Entered - - - - -	10 November 1842
Mate - - - - -	20 November 1848
Lieutenant - - - - -	9 April 1851
Commander - - - - -	9 December 1858
Captain - - - - -	12 December 1863

150

—

On 23rd July 1855, when Lieutenant of H.M.S. "Magicienne," he was Gazetted for service under fire against Vibourg. Was First Lieutenant of "Arrogant," at bombardment of Sweaborg in 1855; and on 12th September 1855, served in boats at the cutting out of Russian vessels from Kodoista.

On 2nd November 1858, when serving in H.M.S. "Magicienne," was Gazetted with high praise for his conduct in a successful action with a Chinese piratical fleet in August 1858; and he was specially promoted to the rank of Commander for services at the destruction of a horde of Chinese pirates in October 1858.

As a Captain, he has commanded Her Majesty's Ships "Serapis," "Pallas," and "Invincible," and is now serving as Captain in charge of the Steam Reserve in the Medway.

He has about 21 years' service as a commissioned officer.

## MEDICAL OFFICERS.

Nil.

TOTAL - - - £.

7,400

7,500

## B.—PENSIONS FOR CONSPICUOUS BRAVERY:

The Pensions to Warrant and Petty Officers, Seamen, and Marines, who have received the Decoration of the "Victoria Cross" for the merit of Conspicuous Bravery, for the Year 1876-77, amounted to - - - - -

170

170

Number on Pension, 17.

The names of the Pensioners were given on the Navy Estimates for the Years:—

1858-59 - - - - - p. 99	1865-66 - - - - - p. 90
1862-63 - - - - - 84	1866-67 - - - - - 113
1864-65 - - - - - 82	

The Annuities to Chief and First Class Petty Officers and Non-Commissioned Officers of Marines who received a Medal for conspicuous gallantry during the Ashantee War, under Order in Council of 7th July 1874, amounted to - - - - -

70

70

The names of the Annuityants were given on the Navy Estimates for the year 1875-76, p. 128.

TOTAL - - - £.

240

240

VOTE 16 (SECTION 1).—MILITARY PENSIONS AND ALLOWANCES—*continued.*

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.		
	£.	£.		
C.—FLAG OFFICERS' RETIRED SERVICE PENSIONS:				
Flag Officers on Reserved Half-Pay in Receipt of Retired Service Pensions, granted in pursuance to Her Majesty's Order in Council, 25 June 1851, viz.:				
Admiral Sir Henry Smith, K. C. B. - - - - -	150	150		
J. J. Tucker - - - - -	150	150		
TOTAL - - - £.	300	300		
D.—PENSIONS AND GRATUITIES FOR WOUNDS AND INJURIES RECEIVED IN THE SERVICE:				
The Pensions and Gratuities for Wounds and Injuries, and as Voted in the Estimates 1876-77, amounted to - - - - -				
	9,207	9,207		
Abate,—Amount of Pensions ceased between 1 January and 31 December 1876				
	1,213			
	7,994			
Add,—Pensions granted between 1 January and 31 December 1876, viz.:				
	£.	s.	d.	
William E. O'Brien, Esq. - Fleet Surgeon - Injury to eyesight - - - - -	75			
Lieutenant G. S. Smith - Pension awarded for one year in 1875, for impairment of eyesight, to be continued for life - - - - -	50			
Mr. Lewis K. Bell - Act. Nav. Sub-Lieut. - Injuries received on duty in H.M.S. Doris on 6 June 1876 (for two years) -	45	12	6	
Mr. James Meiklejohn - Engineer - Injury received on duty - - - - -	50			
Mr. Henry Rumble - Engineer - Injury received on duty	50			
Add fractions to make even amount - - - - -	7	6		
	271			
TOTAL - - - £.	8,265	9,207		
Number of Pensioners of each Class paid out of the above sum:				
Commissioned Officers.	Captains - - -	11	Royal Marines. { Captains - - -	3
	Commanders - - -	6	Lieutenants - - -	2
	Lieutenants - - -	20	Engineers - - -	18
	Staff Commander -	1	Warrant Officers. { Boatswains - - -	2
	Navigating Lieutenants	2	Carpenter - - -	1
	Navigating Sub-Lieutenants - - -	5	Subordinate Officers. } Midshipmen - - -	4
	Inspector General of Hospitals - - -	1		
	Surgeons - - -	8		
	Paymaster in Chief -	1		
	Paymasters - - -	2		
Chief Engineer - -	1			
			TOTAL - - -	83



VOTE 16 (SECTION 1).—MILITARY PENSIONS AND ALLOWANCES.—*continued.*

## E.—PENSIONS TO ENGINEERS, WARRANT OFFICERS, &amp;c.:

The Pensions to Engineers and Warrant Officers, and as voted in the Estimates 1876-77, amounted to - - - - -

Abate,—Amount of Pensions ceased between 1 January and 31 December 1876 -

Add:—

Pensions granted between 1 January and 31 December 1876, to 9 Engineers, 5 Chief Gunners, 6 Chief Boatswains, 4 Chief Carpenters, 14 Gunners, 14 Boatswains, 7 Carpenters, varying from 40 l. to 150 l. a year - - - - -

For Military Pensions to 59 Chief Officers of Coast Guard, transferred from Section 2 of this Vote, Sub-head C. - - - - -

For Amount expected to be required to meet the Increase of the Pension List, and Revision of Scale of Pensions, consequent on the Recommendations of the Committee on Engineer Officers - - - - -

TOTAL - - - £.

Number of Pensioners of each Class paid out of the above sum:

Engineers (including Assistant Engineers) 200	Boatswains - - - 177
Chief Gunners - - - 23	Carpenters - - - 120
Chief Boatswains - - - 22	Cooks - - - 13
Chief Carpenters - - - 17	Chief Officers Coast 59
Gunners - - - 199	Guard.

TOTAL - - - 830

## F.—PENSIONS TO WIDOWS AND RELATIVES OF OFFICERS SLAIN, &amp;c.:

The Pensions to the Widows and Relatives of Officers Slain, Drowned, &c., as voted in the Estimates for 1876-77, amounted to - - - - -

Abate,—Amount of Pensions ceased between 1st January and the 31st December 1876 - - - - -

Add,—Pensions granted between 1 January and 31 December 1876, viz:

To the Widow of—

Thomas Corral, Esq., Surgeon - - - - -	45
Thomas Elliott, Esq., Paymaster - - - - -	65
C. S. Hills, Esq., Paymaster - - - - -	100
T. G. Slade, Esq., Chief Engineer - - - - -	100
Mr. Matthew Blank, Engineer - - - - -	50
Mr. Alexander Clarke, Engineer - - - - -	50
John Jones, Gunner - - - - -	30
Thomas Stafford, Boatswain - - - - -	30
Nicholas Kitt, Boatswain - - - - -	30

To the Sister of—

William A. Brown, Esq., Paymaster - - - - -	50
---	----

TOTAL - - - £.

Number of Pensioners of each Class paid out of the above sum:

Flag Officers - - - 3	Inspectors of Steam Ma-
Captains - - - 18	chinery - - - 2
Commanders - - - 11	Chief Engineers - - - 4
Lieutenants - - - 16	Engineers - - - 31
Staff Commanders - - 2	Warrant Officers - - 84
Navigating Lieutenants 17	Master of Packet - - 1
Navigating Sub-Lieu-	Ice Master - - - 1
tenants - - - 2	Pilots and others - - 6
Chaplains - - - 3	Chief Officers, Coast Guard 2
Medical Officers - - 13	
Paymasters - - - 16	TOTAL - - - 235
Captains, R.M. - - - 3	

VOTE 16 (SECTION 1).—MILITARY PENSIONS AND ALLOWANCES—*continued.*

		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
<b>G.—PENSIONS TO WIDOWS OF NAVAL OFFICERS:</b>			
The Pensions to Widows of Naval Officers, as voted in the Estimates for 1876-77, amounted to - - - - -		£. 130,854	£. 130,854
Abate—Amount of Pensions ceased between 1 January and 31 December 1876 (less 2,500 l. abated in Estimates, 1876-77, for estimated probable excess of Pensions ceasing over those granted) - - - - - £. 5,472			
For estimated probable excess of Pensions ceasing over those granted in 1877-78 - - - - - 1,500		6,972	
		123,882	
Add—Pensions granted between 1 January and 31 December 1876 - 7,640			
For Military Pensions to Widows of Chief Officers of Coast Guard transferred from Section 2 of this Vote, Sub-head C. - - - 450		8,090	
TOTAL - - - £.		131,972	130,854
Number of Pensioners of each Class paid out of the above sum :			
To Widows of -	Flag Officers - 135	Chaplains - - - 19	
	Captains - - - 235	Naval Instructors - 9	
	Commanders - 463	Inspectors of Machinery } 57	
	Staff Captain - 1	and Chief Engineers - }	
	Staff Commanders 47	Engineers - - - 57	
	Secretaries - -	Warrant Officers - - 667	
	Lieutenants - 346	Senior Mate, Coast Guard 1	
	Navigating Lieu- tenants - - 123	Medical Officers - - 236	
	Navigating Sub- Lieutenant - 1	Paymasters - - - 187	
		Chief Officers, Coast Guard - - - 18	
		TOTAL - - - 2,604	
<b>H.—PENSIONS TO WIDOWS OF MARINE OFFICERS:</b>			
The Pensions to Widows of Marine Officers, as voted in the Estimates for 1876-77, amounted to - - - - -		8,880	8,880
Abate—Amount of Pensions ceased between 1 January and 31 December 1876 -		362	
		8,518	
Add—Pensions granted between 1 January and 31 December 1876 -		380	
TOTAL - - - £.		8,898	8,880
Number of Pensioners of each Class paid out of the above sum :			
To Widows of -	General Officers - 13	Lieutenants - - - 67	
	Colonels - - - 6	Assistant Surgeons - 2	
	Lieut. Colonels - 15	Quartermaster - 1	
	Captains - - - 66	TOTAL - - - 170	
<b>I.—COMPASSIONATE LIST:</b>			
Allowances to the Children of Naval and Marine Officers who may be placed on the Compassionate List - - - - - £.		18,500	18,500
<b>K.—COMPENSATION ALLOWANCES TO LIEUTENANTS, LATE OF NAVAL HOSPI- TALS, ON LOSS OF APPOINTMENTS - - - - - £.</b>		265	265

## VOTE 16 (SECTION 1).—MILITARY PENSIONS AND ALLOWANCES—continued.

	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
<b>L.—PENSIONS TO OLD AND DISABLED COMMISSIONED OFFICERS:</b>	£.	£.
[Originally paid out of the Funds of Greenwich Hospital, under Act 46 Geo. 3, cap. 100, sec. 1 (1806).]		
Pensions to Commissioned Officers on account of Age, Infirmary, or Wounds, viz.:		
10 Captains, at 80 l. a year each - - - - -	800	
15 Commanders, at 65 l. ditto - - - - -	975	
50 Lieutenants, at 50 l. ditto - - - - -	2,500	
	4,275	4,275
15 Navigating Officers, at 50 l. each a year - - - - -	750	750
(Under Order in Council, dated 11 June 1863.)		
<b>TOTAL - - - £.</b>	<b>5,025</b>	<b>5,025</b>
<b>M.—PENSIONS AND GRATUITIES TO SEAMEN AND MARINES:</b>		
For Pensions to Petty Officers, Seamen, and Marines, for Service or for Wounds or Hurts received in the Service, at various rates, viz. :—		
14,273 Petty Officers and Seamen - - - - -	337,466	
6,763 Marines - - - - -	123,819	
<b>21,036</b>	<b>461,285</b>	
To provide for increased rates of Pensions; and for estimated excess of Pensions granted over those ceasing - - - - -	16,000	
	477,285	459,026
For long Service Medal Gratuities to Petty Officers on Pension, and for Gratuities to Seamen and Marines invalided from or injured in the Service, not entitled to Pension - - - - -	4,000	3,000
For Annuities to Serjeants of Marines for distinguished or meritorious Services, in addition to their Pensions - - - - -	250	260
<b>TOTAL - - - £.</b>	<b>481,535</b>	<b>462,286</b>
<b>N.—COMPASSIONATE ALLOWANCES TO LATE OFFICERS OF THE NAVY AND ROYAL MARINES:</b>		
For Compassionate Allowances to late Officers of the Navy and Royal Marines - - - - -	1,000	—
<b>O.—COMMUTATION OF MILITARY PENSIONS:</b>		
To provide for the payment to the Commissioners for the Reduction of the National Debt of a Terminable Annuity sufficient to repay them, at the expiration of ten years, the amount advanced, together with interest thereon at the rate of 3½ per centum per annum, in respect of the Military Pensions commuted during the year ended 31 December 1870, under the authority of “The Pensions Commutation Act, 1869” - - - - -	1,380	1,380
Ditto - - - - ditto, under the authority of “The Pensions Com- mutation Act, 1871,” for the year ended 31 December 1871 - - - - -	2,489	2,489
Ditto - - - - ditto - - - - - 1872 - - - - -	2,179	2,179
Ditto - - - - ditto - - - - - 1873 - - - - -	2,499	2,499
Ditto - - - - ditto - - - - - 1874 - - - - -	1,483	1,483
Ditto - - - - ditto - - - - - 1875 - - - - -	848	848
Ditto - - - - ditto - - - - - 1876 - - - - -	1,214	—
<b>TOTAL - - - £.</b>	<b>12,092</b>	<b>10,878</b>



## Vote 16 (SECTION No. 2).—CIVIL PENSIONS AND ALLOWANCES.

	REQUIRED for the Service of the Year 1877-78.	LAST VOTE for the Financial Year 1876-77.
A.—PENSIONS, CIVIL; SALARIED OFFICERS.	£.	£.
B.—PENSIONS, CIVIL; ARTIFICERS, &c.		
The Superannuations and Pensions granted to Persons formerly employed in the Civil Establishments of the Navy, as shown in the Estimates, 1876-77, amounted to - - - - -	205,618	205,618
Abate,—Amount of Pensions ceased between 1st January and 31st December 1876. (Less 6,000 <i>l.</i> abated in Estimates, 1876-77, for estimated excess of Pensions ceasing over those granted) - - - - -	4,374	
For estimated probable excess of Pensions ceasing over those granted in 1877-78 - - - - -	4,000	
	8,374	
£.	197,244	
Add,—Pensions granted between the 1st January and 31st December 1876.		
ON SUPERANNUATION:		
	SERVICES.	PENSIONS.
	<i>Yrs. Mths.</i>	<i>£. s. d.</i>
ADMIRALTY.		
J. P. Batcheller, Established Writer - - - - -	16 9	38 1 4
DOCKYARDS.		
CHATHAM:		
J. J. Robinson, Head Master, Dockyard School - - - - -	24 0	91 13 4
J. Breaks, Foreman of Joiners - - - - -	32 4	106 13 4
SHEERNESS:		
Jabez Wallis, Foreman of Storehouses - - - - -	39 3	78 - -
Thomas Parrish, Foreman of Works - - - - -	42 1	120 - -
H. C. G. Bedford, Storekeeper* - - - - -	17 8	211 3 9
PORTSMOUTH:		
John Garrett, Master Sailmaker - - - - -	41 1	133 6 8
DEVONPORT:		
W. M. Carrington, Storekeeper - - - - -	- - -	31 5 -
(Increase of Pension, Estimates 1876-77, p. 142.)		
Thomas Bailey, Foreman of Smiths - - - - -	43 4	100 - -
J. C. M. Hughes, Clerk - - - - -	15 7	47 10 -
HONG KONG:		
R. F. Hawke, Accountant - - - - -	18 0	354 - 8
Carried forward - - - £.	1,311 14 1	197,244
		205,618

\* In addition to Pension from Indian Funds.

Vote 16 (SECTION No. 2).—CIVIL PENSIONS AND ALLOWANCES—*continued.*

A.—PENSIONS, CIVIL; SALARIED OFFICERS } *continued.*  
 B.—PENSIONS, CIVIL; ARTIFICERS, &c. }

Pensions granted between 1st January and 31st December  
 1876—*continued.*

ON SUPERANNUATION—*continued.*

	SERVICES.	PENSIONS.	£.	£.
	Yrs. Mths.	£. s. d.		
Brought forward - - - -	- - -	1,911 14 1	197,244	205,618
DOCKYARDS--continued.				
BERMUDA:				
Thaddeus Dismont, Naval Storekeeper - - - -	41 1	466 13 4		
		1,778 7 5		
216 Artificers at Pensions varying from 10 <i>l.</i> to 63 <i>l.</i> 7 <i>s.</i> 11 <i>d.</i> - - - -	- - -	7,558 12 7	9,337	
ON REDUCTION OF OFFICE:				
ADMIRALTY.				
A. F. M. Spalding, Clerk - - - - -	21 2	289 6 8		
HOSPITAL.				
HASLAR:				
J. S. Cape, Dispenser - - - - -	6 10	20 - 4		
Add fraction to make even amount - - - - -	- - -	- 13 -	310	
SPECIAL PENSION:				
Admiral Sir Alexander Milne, Bart., G.C.B., Lord of the Admiralty - - - - -	- - -	- - -	1,000	
TOTAL - - - £.			207,891.	205,618

## A B S T R A C T.

	Number of Pensioners.	1877-78.	1876-77.
		£.	£.
PENSIONS, CIVIL; SALARIED OFFICERS - -	447	85,595	85,184
PENSIONS, CIVIL; ARTIFICERS, &c. - -	4,269	122,296	120,434
TOTAL - - -	4,716	207,891	205,618

Vote 16 (SECTION No. 2).—CIVIL PENSIONS AND ALLOWANCES—*continued.*

		REQUIRED for the Service of the Year 1877-78.	LAST VOTE for the Financial Year 1876-77.
C.—PENSIONS, COAST GUARD:			
The Pensions granted to Persons formerly employed in the Coast Guard Service, and Compassionate Allowances to the Widows of Men who have met their Deaths on Duty, as shown in the Estimates for 1876-77, amounted to		£. 55,283	£. 55,283
Abate;—			
Amount of Pensions ceased between 1st January and 31st December 1876 ( <i>less 300 l. abated in Estimates 1876-77 for estimated excess of Pensions ceasing over those granted</i> )			2,896
Estimated probable excess of Pensions ceasing over those granted in 1877-78			500
For Military Pensions to Chief Officers, 3,997 l., and to Widows of Chief Officers, 450 l., transferred to Section 1 of this Vote, Sub-heads E. and G., respectively		4,447	
		7,843	
Add,—Pensions and Allowances granted between the 1st January and 31st December 1876, viz:—		47,440	
To 55 Officers and Men lately belonging to the Coast Guard Service on Shore		2,776	
TOTAL		50,216	55,283
Number of Pensioners of each Class paid out of the above Sum:			
Clerks, Coast Guard Office	8	Acting Boatswain	1
Messengers, Coast Guard Office	1	Mariners	4
Inspecting Chief Officers	19	Mounted Guard	7
Lieutenants	24	Gunners	2
Chief Officers	77	Senior Mates	9
Chief Quartermasters	12	Second Mates in Command	7
Masters and Second Masters	8	Chief Gunner's Mates	2
Chief Boatmen in Charge	139	Acting Chief Boatswain's Mates	3
Chief Boatmen	133	Acting Chief Carpenter's Mates	5
Commissioned Boatmen	408	Divisional Carpenters	9
Boatman in Charge	1	Steward	1
Boatmen	311	Widows	86
Able Seamen (Tender)	19	Children	80
Extra Men	20	TOTAL	1,396
D.—GRATUITIES TO PERSONS ON RETIREMENT OR DISCHARGE:			
For Gratuities to Persons on Retirement or Discharge from the Public Service, not entitled to Pension, and to Yard Workmen for Injuries received in the Service		1,500	1,400
E.—CONTRIBUTION IN AID OF A PENSION FUND FOR THE METROPOLITAN POLICE:			
Estimated Amount required for Contribution in Aid of the Fund for the Pensions of Metropolitan Police employed in the several Establishments at Home		2,673	2,550
F.—COMMUTATION OF CIVIL PENSIONS:			
To provide for the payment to the Commissioners for the Reduction of the National Debt of a Terminable Annuity sufficient to repay them, at the expiration of ten years, the amount advanced, together with interest thereon at the rate of $3\frac{1}{2}$ per centum per annum, in respect of the Civil Pensions commuted during the year ended 31st December 1870, under the authority of "The Pensions Commutation Act, 1869"		5,593	5,593
Ditto ditto under the authority of "The Pensions Commutation Act, 1871," for the year ended 31st December 1871		3,618	3,618
Ditto ditto, 1872		2,938	2,938
Ditto ditto, 1873		2,074	2,074
Ditto ditto, 1874		2,366	2,366
Ditto ditto, 1875		736	736
Ditto ditto, 1876		376	—
TOTAL		17,701	17,325



# VOTE 17.

## EXTRA ESTIMATE FOR SERVICES NOT NAVAL.—FREIGHT, &c. ON ACCOUNT OF THE ARMY DEPARTMENT.

ESTIMATE of the Sum which will be required in the Year ending 31st March 1878, to defray the Expense of Services not NAVAL; viz., FREIGHT, &c. on account of the ARMY DEPARTMENT.

One Hundred and Sixty-eight Thousand Two Hundred and Eighty Pounds.

II. SUB-HEADS under which this Vote will be accounted for.

	1877-78.	1876-77.	INCREASE.	DECREASE.	
	£.	£.	£.	£.	
A. { SPECIAL ALLOWANCES TO OFFI- } HER MAJESTY'S TROOP SHIPS CERS AND MEN - - - - -	2,000	2,050	—	50	
B.—VICTUALS, &c. - - - - - DITTO - - -	15,100	14,400	700	—	
C.—COALS, CABIN FURNITURE, AND OTHER STORES DITTO - -	17,600	25,800	—	8,200	
D.—MEDICINES, &c. - - - - - DITTO - - -	700	700	—	—	
E.—PILOTAGE AND OTHER MISCELLANEOUS EXPENSES, DITTO - -	2,900	3,950	—	1,050	
F.—FREIGHT, &c. OF SHIPS ON MONTHLY PAY - - - - -	5,100	7,900	—	2,800	
G.—CONVEYANCE OF TROOPS, ABROAD AND HOMEWARD - - -	43,800	46,200	—	2,900	
H.—COALS FOR STEAM TRANSPORTS AND FREIGHT SHIPS ON MONTHLY PAY - - - - -	—	3,600	—	3,600	
I.—FREIGHT OF ARMY AND ORDNANCE STORES, ABROAD AND HOMEWARD - - - - -	26,500	30,000	—	3,500	
K.—INTERCOLONIAL CONVEYANCE OF TROOPS AND MESS - - -	8,150	9,050	—	900	
L.—INTERCOLONIAL FREIGHT OF ARMY AND ORDNANCE STORES -	800	800	—	—	
M.—MESS ALLOWANCES TO ARMY OFFICERS, &c., ABROAD AND HOMEWARD - - - - -	4,700	5,800	—	1,100	
N.—FREIGHT OF SHIPS ON SHORT SERVICES - - - - -	4,900	5,000	—	100	
O.—PASSAGE MONEY, ARMY - - - - -	16,000	16,000	—	—	
P.—FITTING TRANSPORTS AND FREIGHT SHIPS - - - - -	200	400	—	200	
Q.—BEDDING AND OTHER STORES FOR TROOPS - - - - -	2,850	3,000	—	150	
R.—FORAGE AND STORES FOR HORSES - - - - -	300	400	—	100	
S.—PAY AND CONTINGENT EXPENSES OF TRANSPORT OFFICERS AFLOAT, &c. - - - - -	—	—	—	—	
T.—PROVISIONS, &c. FOR TROOPS - - - - -	15,400	20,850	—	5,450	
Service Afloat - - - - -	166,500	195,900	700	30,100	
U.—TRANSPORT OFFICERS IN LONDON AND AT THE OUTPORTS -	1,780	1,580	200	—	Actual Expenditure in 1875-76.
£.	168,280	197,480	900	30,100	£. 178,364

NET DECREASE - - - £. 29,200.

Note.—The estimated amount of Old Stores and Extra Receipts relating to this Vote to be paid into the Exchequer for the year 1877-78 is 2,000 £., included in total sum of 217,000 £., shown in Prefatory Statement of these Estimates, page 3.

VOTE 17.—Extra Estimate for Services not Naval.—FREIGHT, &c. on account of the ARMY DEPARTMENT—*continued.*

III. DETAILS of the foregoing.

	Estimated Gross Payments, 1877-78.	Deduct Estimated Credits to Vote.	Required for the Service of the Year 1877-78.	Gross Vote for the Year 1876-77.	Deduct Estimated Credits.	Voted for the Financial Year 1876-77.
For Expense of Her Majesty's Troop Ships:	£.	£.	£.	£.	£.	£.
A.—Special Allowances to Officers and Men (in addition to their Pay) - - - - -	2,000	—	2,000	2,050	—	2,050
B.—Victuals, &c. for ditto - - - - -	15,100	—	15,100	14,400	—	14,400
C.—Coals, Cabin Furniture, and other Stores - -	17,600	—	17,600	25,800	—	25,800
D.—Medicines, &c. for Officers and Men - - -	700	—	700	700	—	700
E.—Pilotage, including Tolls for passage of Suez Canal, and Passage Money, Travelling Expenses, and Lodging Allowances of Crews, and other Miscellaneous Expenses - - - - -	2,900	—	2,900	3,950	—	3,950
TOTAL EXPENSE for the Employment of Her Majesty's Troop Ships }	38,300	—	38,300	46,900	—	46,900
F.—For Freight of Ships on Monthly Pay, or for Purchase of the same - - - - -	5,100	—	5,100	7,900	—	7,900
G.—For Freight of Ships engaged for the Conveyance of Troops to and from Great Britain and the Colonies, and of Military Pensioners from Great Britain - - - - -	43,300	—	43,300	46,200	—	46,200
H.—For Coals for Steam Transports on Monthly Pay - - - - -	—	—	—	3,600	—	3,600
I.—For Freight of Ships for the Conveyance of Military Stores to and from Great Britain and the Colonies - - - - -	26,500	—	26,500	30,000	—	30,000
K.—For Freight of Ships for the Conveyance of Troops from one Colony to another, and their Rations; and for the Mess and Passage of Officers and Men from one Foreign Station to another, and from one Port to another in the same command - - - - -	8,150	—	8,150	9,050	—	9,050
L.—For Freight of Ships for the Conveyance of Stores from one Colony to another, and from one Foreign Station to another, and from one Port to another in the same command - -	800	—	800	800	—	800
M.—For Mess of Military Officers and Civilians of the Army Department while on Passage to and from Foreign Stations in Her Majesty's Ships of War, Transports, and Freight Ships -	10,400	5,700	4,700	12,600	6,800	5,800
N.—For Freight of Ships for the Conveyance of Troops coastwise, and between Great Britain and Ireland, when over 50 men - - - - -	4,900	—	4,900	5,000	—	5,000
O.—For Passage Money on account of Military Officers and Civilians of the Army Department going upon and returning from Services Abroad - - - - -	18,000	2,000	16,000	18,000	2,000	16,000
P.—For fitting Monthly Transports and Freight Ships. - - - - -	200	—	200	400	—	400
Q.—For Bedding, Blankets, and other Stores, for Troops - - - - -	2,850	—	2,850	3,000	—	3,000
R.—For Forage and Stores for Horses - - - -	300	—	300	400	—	400
S.—For the Pay and Contingent Expenses for Officers of the Navy employed as Transport Officers afloat - - - - -	—	—	—	—	—	—
T.—For Provisions and Medical Comforts for Troops embarked on board Ships of War, Troop Ships, Monthly Transports, and Freight Ships - -	24,700	9,300	15,400	29,700	8,850	20,850
TOTAL Service Afloat - - - £.	183,500	17,000	166,500	213,550	17,650	195,900
U.—Transport Officers in London and at the Outports and for Contingent Expenses of Naval Officers employed on Transport Duties - - - - -	1,780	—	1,780	1,580	—	1,580
TOTAL - - - £.	185,280	17,000	168,280	215,130	17,650	197,480

## RECAPITULATION OF THE FOREGOING ESTIMATES.

Nos. of Votes.	Pages.		REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
1 to 14	to	NAVAL SERVICE - { EFFECTIVE - NON-EFFECTIVE	£. 8,890,832	£. 9,194,608
15 and 16	to		1,920,717	1,896,784
		TOTAL for the NAVAL SERVICE, as per Abstract - - - - - }	10,811,549	11,091,392
		For the Service of other Departments:		
17		ARMY DEPARTMENT (Conveyance of Troops)	168,280	197,480
		GRAND TOTAL - - - £.	10,979,829	11,288,872

Ten Million Nine Hundred and Seventy-nine Thousand Eight Hundred and Twenty-nine Pounds.

GEORGE WARD HUNT. H. R. YELVERTON. A. W. A. HOOD. GILFORD. MASSEY LOPES.

Admiralty, }  
20 February 1877.

ALGERNON EGERTON  
Secretary.





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## A P P E N D I X.

(For Description,—see Table of Contents, p. 2.)

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## EXPLANATORY STATEMENT (A. 1)

STATEMENT, showing in Detail the PAY and ESTABLISHED ALLOWANCES of FLAG OFFICERS in Commission, and other OFFICERS, PETTY OFFICERS, SEAMEN and BOYS, comprised in the Estimate for "SEAMEN," classified under OFFICERS, &c., and the FULL COMPLEMENTS of all HER MAJESTY'S SHIPS and VESSELS in Commission, and COAST

RANK.		Pay of each Rank.		Allowances of each Rank.			TOTAL Pay and Allowances of each Rank.		
		Daily.	Annual.	Nature.	Daily.	Annual.			
FLAG OFFICERS, AND SUPERINTENDENTS OF DOCKYARDS, &c.		£. s. d.	£. s. d.		£. s. d.	£. s. d.	£. s. d.		
Admirals	{ Commanding in Chief at Home	5	- -	1,825	- -	{ Table Money - Allowance in lieu of Domestics - }	4 10 - - - -	1,642 10 - 500 - -	{ 3,967 10
						{ Table Money - Allowance in lieu of Domestics - }	3 - - - - -	1,095 - - 500 - -	{ 3,420 - -
Vice Admirals	{ Commanding in Chief at Home	4	- -	1,460	- -	{ Table Money - Allowance in lieu of Domestics - }	3 - - - - -	1,095 - - 400 - -	{ 2,955 - -
	{ Commanding in Chief Abroad	4	- -	1,460	- -	Table Money	4 10 -	1,642 10 -	3,102 10 -
	{ Commanding at Queenstown	3	- -	1,095	- -	{ Table Money - Allowance in lieu of Domestics - }	3 - - - - -	1,095 - - 250 - -	{ 2,440 - -
	{ Commanding the Channel Squadron	3	- -	1,095	- -	Table Money	3 - -	1,095 - -	2,190 - -
	{ Second in Command of the Channel Squadron	3	- -	1,095	- -	- ditto -	1 10 -	547 10 -	1,642 10 -
	{ Commanding in Chief Abroad	3	- -	1,095	- -	- ditto -	4 10 -	1,642 10 -	2,737 10 -
Rear Admirals	{ Second in Command of the Mediterranean Fleet	3	- -	1,095	- -	- ditto -	2 - -	730 - -	1,825 - -
	{ Commanding Cruising Squadron	3	- -	1,095	- -	- ditto -	3 - -	1,095 - -	2,190 - -
	{ Superintending Dockyards at Home	3	- -	1,095	- -	{ Table Money - Allowance in lieu of Domestics - }	1 10 - - - -	547 10 - 200 - -	{ 1,842 10 -
	{ Superintending Dockyards Abroad	3	- -	1,095	- -	Table Money	2 - -	730 - -	1,825 - -
	{ Superintendent of Naval Reserves	3	- -	1,095	- -	- ditto -	1 10 -	273 15 - (for 6 months.)	1,369 - -
	{ Abroad					{ Pay and Command Money, as Captain of the Ship he commands, provided for under "Captains," p. 151 -			
Commodores, 2nd Class	{ Abroad					- ditto -			
	{ Superintending Dockyards Abroad	1 13	-	602 5	-	{ Allowance - Table Money - }	1 - - 1 - -	365 - - 365 - -	{ 730 - -
						{ Allowance - Table Money - }	- 10 - 1 - -	182 10 - 365 - -	{ 547 10 -
						{ Allowance - Table Money - Command Money - }	- 10 - 1 - - - 10 6	182 10 - 365 - - 191 12 6	{ 1,341 7 6
Captains	{ Superintending Dockyards at Home	1 13	-	602 5	-	{ Command Money } or Allowance -	- 5 -	91 5 -	{ 818 10 -
	{ In Charge of Naval Establishments Abroad	1 13	-	602 5	-	{ Allowance in lieu of Domestics - }	- - -	125 - -	
		1 13	-	602 5	-	Allowance -	- 5 -	91 5 -	693 10 -
Flag Lieutenants		- 10	-	182 10	-	Command Money -	- 10 6	191 12 6	793 17 6
									182 10 -
		1 12 11		600 14 7					600 14 7
		1 13	-	602 5	-			40 - -	642 5 -
	{ At Home	1 10	-	547 10	-	{ Allowance in lieu of Servants - }	- - -	40 - -	587 10 -
		- 16 6		301 2 6				40 - -	341 2 6
Secretaries to Flag Officers, &c.		1 2	-	401 10	-				401 10 -
		1 5	-	456 5	-				456 5 -
		1 2	-	401 10	-				401 10 -
	{ Abroad	1	- -	365	- -				365 - -
		- 16 6		301 2 6					301 2 6
		- 15 -		273 15	-				273 15 -
Clerks and Retinues		{ At various rates of Pay, according to their Ranks or Ratings, from 19l. 15s. 5d. to 182l. 10s. per annum }							

N.B.-Fractional parts of a Pound are not shown in the Totals of the several Ranks and Ratings.



o. 1.

VOTE No. 1.—“WAGES, &c., to SEAMEN,” page 7.

their Retinues; of OFFICERS superintending HER MAJESTY'S DOCKYARDS, &c., and their Retinues; and of COMMISSIONED several Heads of Service specified; the whole being calculated on the basis of the Pay and Allowances of the FLAG VESSEL STATIONS ON SHORE, on the 1ST DECEMBER 1876.

Commanders in Chief, &c., on Home Stations.			Commanders in Chief, &c., on Foreign Stations.			Superintendents of Dockyards, and Superintendent of Naval Reserves.			Total Number of each Rank.	Total Amount of each Rank.		TOTAL CHARGE.	RANK.	
Total per Annum.		No.	Total per Annum.		No.	Total per Annum.		Pay.		Allowances.				
Pay.	Allowances.		Pay.	Allowances.		Pay.	Allowances.							
£.	£.		£.	£.		£.	£.		£.	£.	£.			
1,825	2,142	-	-	-	-	-	-	2	3,650	3,737	7,387	Admirals.		
1,825	1,595	-	-	-	-	-	-							
1,460	1,495	-	-	-	-	-	-	4	5,840	6,422	12,262	Vice Admirals.		
-	-	3	4,380	4,927	-	-	-							
1,095	1,345	-	-	-	-	-	-	12				Rear Admirals.		
1,095	1,095	-	-	-	-	-	-							
1,095	548	-	-	-	-	-	-							
-	-	2	2,190	3,285	-	-	-							
-	-	1	1,095	730	-	-	-							
-	-	1	1,095	1,095	-	-	-							
-	-	-	-	-	3	3,285	2,243							
-	-	-	-	-	1	1,095	730							
-	-	-	-	-	1	1,095	274							
-	-	2*	-	1,460	-	-	-		3*	-	2,008		2,008	Commodores, 2nd Class.
-	-	1*	-	548	-	-	-							
-	-	-	-	547	1	602	192		1	602	739		1,341	
-	-	-	-	-	2	1,204	433	4	2,409	715	3,124	Captains.		
-	-	-	-	-	1	603	91							
-	-	-	-	-	1	602	191							
1,095	-	7	1,278	-	1	182	-	14	2,555	-	2,555	Flag Lieutenants.		
-	-	-	-	-	1	601	-	19				{ Secretaries to Flag Officers, &c.		
602	40	-	-	-	-	-	-							
1,096	80	-	-	-	-	-	-							
301	40	-	-	-	-	-	-							
401	-	-	-	-	-	-	-							
-	-	1	456	-	-	-	-							
-	-	4	1,605	-	-	-	-							
-	-	3	1,095	-	-	-	-							
-	-	1	301	-	-	-	-							
-	-	4	1,096	-	-	-	-							
2,578	-	78	4,429	-	25	840	-	134	7,847	-	7,847	Clerks and Retinues.		
14,468	8,380	108	19,020	12,592	37	10,109	4,154	193						
No. 156 - - £. 54,460						No. 37 - £. 14,263								
* 3 { Deduct Commodores included among "Captains" on next page						* 3								
153 TOTALS carried to page 159 - - -						190.			43,597	25,126	68,723	TOTALS carried to page 159.		

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RANK.	PAY OF EACH RANK.			ALLOWANCES OF EACH RANK.			EFFECTIVE, FOR GENERAL SERVICE.				FIRST RESERVE SHIPS, including Tenders (formerly Coast Guard District Ships and Cruisers).				GUNNERY, and TRAINING SHIPS.				STATIONARY, REPAIR, and DRIFT SHIPS (including Yachts).			
		Daily.	Annual.	Nature.	Daily.	Annual.	No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		Number of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.					
								Pay.	Allowances.		Pay.	Allowances.		Pay.	Allowances.		Pay.	Allowances.				
COMMISSIONED OFFICERS, &c.:																						
Captains	In Command	1st Class	£. s. d. 1 13 -	£. s. d. 602 5 -	Command Money	£. s. d. - - -	17	23,265	10,758	9	5,321	1,725	6	3,050	1,159	11	6,962					
		2nd Class	1 7 6	501 17 6		£. s. d. - - -																
		3rd Class	1 2 6	410 12 6		£. s. d. - - -																
		As above	As above	As above		£. s. d. - - -																
	Employed on Surveying, or Special Service, but not in command of a Ship. To Captain of "Excellent"	-	-	850 - -	Command Money, including Special Rate of Pay	- - -	-	-	-	-	-	-	1	850 -	-	-	-					
	In command	-	1 2 -	401 10 -	Command Money	- - -	-	-	-	-	-	-	-	-	-	-	-					
Staff Captains	In command and in charge of Stores	-	1 2 -	401 10 -	Command Money	- - -	-	-	-	-	-	-	-	-	-	-	-					
					Store Allowance	- - -	-	-	-	-	-	-	-	-	-	-	-					
					Allowance in addition to Full Pay	- - -	-	-	-	-	-	-	-	-	-	-	-					
					Command Money	- - -	-	-	-	-	-	-	-	-	-	-	-					
	All others	-	1 2 -	401 10 -	Ditto	- - -	-	-	-	-	-	-	-	-	-	-	-					
Commanders	In Command	-	1 - -	365 - -	Command Money	- - -	44	16,060	3,011	-	-	-	4	1,400	185	3	1,050					
	Employed on Special Service, but not in command of a Ship	-	1 - -	365 - -	Allowance in addition to Full Pay	- - -	-	-	-	-	-	-	-	-	-	-	-					
					Ditto	- - -	-	-	-	-	-	-	-	-	-	-	-					
		All others	-	1 - -	365 - -	Ditto	- - -	24	8,760	-	9	3,285	-	5	1,825	-	10	3,650				
Inspecting Commanders	In Coast Guard Service on Shore	-	1 - -	365 - -	-	-	-	-	-	-	-	-	-	-	-	-	-					
Deputy Inspector Generals of Hospitals and Fleets	-	-	1 18 -	693 10 -	-	-	-	-	-	-	-	-	-	-	-	-	-					
Chief Inspectors of Machinery Afloat	-	-	1 8 -	511 - -	-	-	-	-	-	-	-	-	-	-	-	-	-					
			1 5 -	456 5 -	-	-	-	-	-	-	-	-	-	-	-	-	-					
			1 8 -	511 - -	-	-	-	-	-	-	-	-	-	-	-	-	-					
			1 5 -	456 5 -	-	-	-	-	-	-	-	-	-	-	-	-	-					
Lieutenants	In Command	-	- 11 -	200 15 -	Command Money	- - -	31	6,223	2,122	7	1,405	319	2	401	91	1	24					
					Store Allowance	- - -	-	-	-	-	-	-	-	-	-	-	-					
					Allowance in addition to Full Pay	- - -	-	-	-	-	-	-	-	-	-	-	-					
					Ditto	- - -	-	-	-	-	-	-	-	-	-	-	-					
	Senior, in Rated Ships, &c.	-	- 10 -	182 10 -	Command Money	- - -	90	16,126	2,884	9	1,613	247	8	1,100	222	16	3,650					
	Gunnery	-	- 10 -	182 10 -	Command Money	- - -	25	4,562	1,195	9	1,643	319	11	2,000	575	2	24					
	All others	-	- 10 -	182 10 -	Command Money	- - -	-	-	-	-	-	-	-	-	-	-	-					
Inspecting Lieutenants	In Coast Guard Service on Shore	-	- 10 -	182 10 -	Command Money	- - -	-	-	-	-	-	-	-	-	-	-	-					
					Store Allowance	- - -	-	-	-	-	-	-	-	-	-	-	-					
					Allowance in addition to Full Pay	- - -	-	-	-	-	-	-	-	-	-	-	-					
					Ditto	- - -	-	-	-	-	-	-	-	-	-	-	-					
COMMISSIONED OFFICERS, &c., carried forward																						
							111	110,136	20,721	61	16,581	2,610	96	21,801	-	28	3,170					

N. B.—Fractional parts of a pound are not shown in the Totals of the several Ranks and Ratings.

\* Employed during a portion of the year only, during the trooping season.



RANK.	PAY OF EACH RANK.		ALLOWANCES OF EACH RANK.			EFFECTIVE, FOR GENERAL SERVICE.		FIRST RESERVE SHIPS, including Tenders (formerly Coast Guard District Ships and Cruisers.)		GUNNERY, and TRAINING SHIPS.		STATIONARY, RECEPTION, and DEPOSIT SHIPS, including Yachts.					
	Daily.	Annual.	Nature.	Daily.	Annual.	No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.	
							Pay.	Allowances.		Pay.	Allowances.		Pay.	Allowances.		Pay.	Allowances.
	£. s. d.	£. s. d.		£. s. d.	£. s. d.		£.	£.		£.	£.		£.	£.		£.	£.
COMMISSIONED OFFICERS, &c.—continued.																	
	At various Rates, according to length of Service and qualification, from 219 <i>l.</i> to 401 <i>l.</i> 10 <i>s.</i> per annum		Command Money.	Brought forward - - -		141	110,136	20,721	61	16,581	2,610	96	21,801	2,300	85	26,088	3,800
In Command - - -	- - -			- 3 9 68 8 9		-	-	-	-	-	-	-	-	-	-	3	825
	- - -		Command Money.	- 2 6 45 12 6		-	-	-	-	-	-	-	-	-	-	-	-
In Command, and in Charge of Stores -	As above - - -			- - - As above - - -		-	-	-	-	-	-	-	-	-	-	-	-
	- - -		Store Allowance - - -	At various Rates, according to the Rate of the Ship, from 38 <i>l.</i> 0 <i>s.</i> 5 <i>d.</i> to 73 <i>l.</i> per annum - -		-	-	-	-	-	-	-	-	-	7	1,925	20
Staff Commanders, and Navigating Lieutenants -	In Charge of Stores, not in Command of Flag Ships, and certain Commanders' Ships on Foreign Stations -		Allowance - - - -	- - - As above - - -		22	5,900	836	-	-	-	-	-	-	1	275	2
	- - -		Allowance - - - -	At various Rates, according to the peculiar circumstances of each case, from 2 <i>s.</i> 6 <i>d.</i> to 5 <i>s.</i> a day - -		10	2,750	730	-	-	-	-	-	-	-	-	-
	- - -		Tuition Allowance in Ships where no Naval Instructor is borne - - -	£. 5 per annum for each Navigating Midshipman instructed, not deducted from his Pay, as in the case of other young gentlemen - -		44	12,795	-	9	2,475	-	2	550	-	27	7,125	-
Staff Commanders, and Navigating Lieutenants serving as Inspecting Officers -	In Coast Guard Service on Shore -		Allowance for additional responsibilities in the larger Iron Clads - - -	- 2 6 45 12 6		-	-	646	-	-	-	-	-	-	-	-	-
	All others - - -		- - -	- - -		-	-	-	-	-	-	-	-	-	-	-	-
Staff Commanders, and Navigating Lieutenants commanding Stations -	ditto - - -		- - -	- - -		-	-	-	-	-	-	-	-	-	-	-	-
Chief Officers, serving as Inspecting Officers -	ditto - - -		- - -	- - -		-	-	-	-	-	-	-	-	-	-	-	-
Chief Officers -	In Tenders (Cruisers) to First Reserve Ships -		- - -	- - -		-	-	-	10	3,212	-	-	-	-	-	-	-
Chief Officers -	Late of Tenders as above -		- - -	- - -		-	-	-	-	-	-	-	-	-	1	201	-
	- - -		- - -	- - -		-	-	-	-	-	-	-	-	-	1	201	-
Chief Engineers -	In Flag Ships, except those at Home Ports -		Allowance for extra duties in such Ships - - -	At various Rates, according to the peculiar circumstances of each case, from 2 <i>s.</i> 6 <i>d.</i> to 5 <i>s.</i> a day - -		7	1,995	502	-	-	-	-	-	-	-	-	-
	- - -		Allowance for Charge of Engines - - -	At various Rates, according to the Horse-power of the Engines, from 1 <i>l.</i> 5 <i>s.</i> to 7 <i>l.</i> per annum - -		-	-	319	-	-	-	-	-	-	-	-	-
	All others - - -		- ditto - - -	- ditto - - -		51	14,765	1,889	9	2,565	438	2	570	61	61	17,385	61
	Acting also as Naval Instructors - -		Additional Pay - - -	Half of their Pay as Naval Instructors - -		25	6,275	3,194	-	-	-	7	1,757	894	5	755	-
Chaplains - - -	- - -		Tuition Allowance - -	£. 5 per annum for each Navigating Midshipman instructed, not deducted from his Pay, as in the case of other young gentlemen - -		-	-	-	-	-	-	-	-	-	-	-	-
	All others - - -		- - -	- - -		15	3,857	-	8	2,008	-	1	251	-	13	3,263	-
Fleet Surgeons -	In Flag Ships of Commanders in Chief on Foreign Stations -		Allowance for extra Duties in such Ships - - -	At various Rates, according to length of Service, from 419 <i>l.</i> 15 <i>s.</i> to 547 <i>l.</i> 10 <i>s.</i> per annum - -		6	2,946	547	-	-	-	-	-	-	-	-	-
	All others - - -		- - -	- - -		12	5,950	-	7	3,437	-	6	2,946	-	11	5,401	-
Staff Surgeons -	At various Rates, according to length of Service, from 328 <i>l.</i> 10 <i>s.</i> to 401 <i>l.</i> 10 <i>s.</i> per annum - -		- - -	- - -		52	10,051	-	6	2,244	-	10	3,740	-	20	7,480	-
	- - -		- - -	- - -		-	-	-	-	-	-	-	-	-	-	-	-
Paymasters -	In Flag Ships, and Ships of Commanders in Chief of Stations; and also in Guard Ships of the Steam Reserve, &c. -		Allowance for extra Duties in such Ships - - -	At various Rates, according to length of Service, from 255 <i>l.</i> 10 <i>s.</i> to 602 <i>l.</i> 5 <i>s.</i> per annum - -		10	1,050	712	-	-	-	2	810	182	8	3,280	-
	- - -		- - -	- - -		-	-	-	-	-	-	-	-	-	-	-	-
	All others - - -		- - -	- - -		53	22,451	-	9	3,645	-	8	3,210	-	15	6,075	-
COMMISSIONED OFFICERS, &c., carried forward - - -						748	213,830	30,096	125	36,107	3,048	131	35,605	3,440	256	80,337	-

N.R.—Fractional parts of a Pound are not shown in the Totals of the several Ranks and Ratings.

LANATORY STATEMENT (A. 1)—continued.

SURVEYING VESSELS		TROOP SHIPS (Imperial Service)				STORE SHIPS			DRILL SHIPS			COAST GUARD on Shore				TROOP SHIPS (Indian Service)				TOTAL of EACH RANK.		TOTAL CHARGE		COMMISSIONED OFFICERS, &c.—continued
Total per Annum.		No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		Number of each Rank.	TOTAL			
Pay.	Allowances.		Pay.	Allowances.		Pay.	Allowances.		Pay.	Allowances.		Pay.	Allowances.		Pay.	Allowances.		Pay.	Allowances.		Pay.	Allowances.	Pay.	
£.	£.		£.	£.		£.	£.		£.	£.		£.	£.		£.	£.		£.	£.		£.	£.		
1,827	703	23	5,703	1,186	-	-	-	9	3,121	411	64	18,250	-	25	4,563	1,186	827	211,070	32,923	243,993				
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	825	137	962				
-	-	-	-	-	2	825	205	-	-	-	-	-	-	-	-	-	10	2,750	547	3,297				
1,241	152	5	1,375	243	-	-	170	-	-	-	-	-	-	-	-	-	32	8,800	444	1,304	10,104		Staff Commanders and Navigating Lieutenant	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	2,750	730	3,480				
8,096	-	-	-	-	3	825	-	-	-	-	-	-	-	5	1,460	-	120	33,026	-	-	34,272			
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	646	-	-			
-	-	-	-	-	-	-	-	-	-	-	2	365	-	-	-	-	2	365	-	-	305		Staff Commanders, and Navigating Lieutenants serving as Inspecting Officers.	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		Staff Commanders, and Navigating Lieutenants commanding Stations.	
-	-	-	-	-	-	-	-	-	-	-	7	1,277	219	-	-	-	9	1,400	-	-	1,400		Chief Officers, serving as Inspecting Officers.	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	3,212	-	-	3,212			
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	402	27	429			Chief Officers.	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	1,995	502	310	2,816			
-	-	5	1,425	183	1	285	28	-	-	-	-	-	-	5	1,460	274	134	38,455	3,807	42,262			Chief Engineers.	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	8,785	4,314	-	13,129			
-	-	2	502	-	-	-	-	-	-	-	-	-	-	*5	748	-	44	10,829	-	-	10,629			Chaplains.
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	2,946	547	3,493			Fleet Surgeons.	
-	-	2	982	-	-	-	-	8	3,928	-	-	-	-	-	-	-	46	22,644	-	-	22,644			Staff Surgeons.
1,055	-	2	748	-	-	-	-	1	374	-	-	-	-	5	1,825	-	99	37,457	-	-	37,457			
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	8,100	1,560	9,660				
2,290	-	5	2,025	-	-	-	-	8	3,240	-	11	5,094	-	5	2,327	-	120	51,287	-	-	51,287			Paymasters.
17,540	856	46	12,760	1,612	7	1,835	403	28	10,663	411	80	26,105	-	50	12,383	1,460	1,542	447,594	47,837	495,431			COMMISSIONED OFFICERS, &c.—carried forward.	

\* Employed during a portion of the year only, during the trooping season.

PAY OF EACH RANK.				ALLOWANCES OF EACH RANK.			EFFECTIVE, FOR GENERAL SERVICE.			FIRST RESERVE SHIPS, including Tenders (formerly Coast Guard District Ships and Cruisers).			GUNNERY, and TRAINING SHIPS.			STATIONARY, RECEPTION and DEPOSIT SHIPS, including Yachts.					
RANK.			Daily.	Annual.	Nature.	Daily.	Annual.	No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		Number of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.			
	£.	s.	d.	£.	s.	d.	Pay.		Allowances.	£.		s.	d.		Pay.	Allowances.		£.	s.	d.	£.
COMMISSIONED OFFICERS, &c.—continued.				£.	s.	d.	£.	s.	d.		£.	s.	d.		£.	s.	d.		£.	s.	d.

A.B.—Fractional parts of a Pound are not shown in the Totals of the several Ranks and Ratings.



## EXPLANATORY STATEMENT (A. 1)—continued.

SURVEYING VESSELS.		TROOP SHIPS (Imperial Service).			STORE SHIPS.			DRILL SHIPS.			COAST GUARD on Shore.			TROOP SHIPS (Indian Service).			TOTAL Number of each Rank.		TOTAL AMOUNT of EACH RANK.		TOTAL CHARGE.	RANK.
Total per Annum.		No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.				Pay.	Allow- ances.		
£.	Allow- ances.		£.	Allow- ances.		£.	Allow- ances.		£.	Allow- ances.		£.	Allow- ances.		£.	Allow- ances.			£.	£.	£.	
17,519	855	46	12,760	1,612	7	1,935	103	26	10,663	411	86	26,105	-	50	12,383	1,460	1,542		417,504	47,837	495,431	COMMISSIONED OFFICERS, &c.
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25		6,470	30	6,509	Naval Instructors.
148	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	302		27,558	120 1,400	29,078	Sub-Lieutenants.
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33		5,420	23	5,443	Chief Gunners. Chief Boatswains. Chief Carpenters.
235	-	5	1,100	-	3	660	-	-	-	-	-	-	-	45	666	-	159		35,199	-	35,199	Surgeons.
-	-	-	-	-	3	630	-	-	-	-	-	-	-	-	-	-	55		11,543	-	11,543	Assistant Paymasters in Charge.
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29		3,654	1,153	4,807	Navigating Sub-Lieutenants.
503	-	5	630	-	2	232	-	-	-	-	-	-	-	5	684	-	53		6,732	-	6,732	
-	-	-	-	-	-	-	-	-	-	-	5	730	-	-	-	-	5		730	-	730	Senior Mates, commanding Sta- tions.
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7		830	-	830	Senior Mates.
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4		401	-	401	
384	-	7	1,120	-	-	-	-	-	-	-	-	-	-	5	821	-	145		23,221	-	23,221	Assistant Paymasters.
1,743	91	24	3,814	-	8	1,231	37	2	301	18	-	-	-	40	5,840	-	726		120,513	2,282	122,795	Engineers and Assistant Engi- neers.
21,072	946	87	10,424	1,612	23	4,708	440	28	10,964	420	91	20,835	-	105	20,394	1,460	3,085		689,874	52,845	742,719	TOTAL, COMMISSIONED OFF CERS, &c.—carried forward

\* Employed during a portion of the year only, during the trooping season.

PAY OF EACH RANK.				ALLOWANCES OF EACH RANK.			EFFECTIVE, FOR GENERAL SERVICE.			FIRST RESERVE SHIPS, including Tenders (formerly Coast Guard District Ships and Cruisers).			GUNNERY, and TRAINING SHIPS.			STATIONARY, REPAIR, and DEPOT SHIPS, (including Yachts).			
RANK.	Daily.		Annual.	Nature.	Daily.		Annual.	No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		Number of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.	
	£. s. d.	£. s. d.			£. s. d.	£.			£.	£.		£.	£.		£.	£.			
				TOTAL, COMMISSIONED OFFICERS, &c.—brought forward - - - - -			1,597	350,185	33,803	225	52,250	3,207	268	52,055	3,518	570	131,529		
SUBORDINATE OFFICERS:																			
Midshipmen - - - - -	- 1 9	31 18 0	- - - - -	- - - - -	- - - - -	- - - - -	166	5,302	-	- - - - -	- - - - -	- - - - -	-	-	-	-	50		
Clerks - - - - -	- 4 -	73 - -	- - - - -	- - - - -	- - - - -	- - - - -	1	73	-	- - - - -	- - - - -	- - - - -	1	73	-	-	9		
Navigating Midshipmen	At Rates as follows, viz.: if above 17 years of age, and with more than two years' Service, 73 <i>l.</i> ; all others, 54 <i>l.</i> 15 <i>s.</i> per annum - - - - -						8	584	-	- - - - -	- - - - -	- - - - -	-	-	-	-	-		
Second Rates - - - - -	In Tenders (Cruisers) to First Reserve Ships, - - - - -	- 4 6	82 2 6	- - - - -	- - - - -	- - - - -	1	82	-	- - - - -	- - - - -	- - - - -	-	-	-	-	1		
	- 4 -	73 - -	- - - - -	- - - - -	- - - - -	- - - - -	-	-	-	12	876	-	-	-	-	-	-		
Naval Cadets - - - - - ( <i>Vide</i> page 172, for the number admitted during the year.)	- 1 -	18 5 -	- - - - -	- - - - -	- - - - -	- - - - -	20	365	-	- - - - -	- - - - -	- - - - -	169 For training.	+ 1,568	-	-	-		
Navigating Cadets	On passing out of the "Britannia" before obtaining the rating of Navigating Midshipman - - - - -	- 2 3	41 1 3	- - - - -	- - - - -	- - - - -	-	-	-	- - - - -	- - - - -	- - - - -	-	-	-	-	-		
	All others - - - - -	- 1 -	18 5 -	- - - - -	- - - - -	- - - - -	-	-	-	- - - - -	- - - - -	- - - - -	-	-	-	-	-		
Assistant Clerks - - - - -	- 2 6	45 12 6	- - - - -	- - - - -	- - - - -	- - - - -	18	821	-	- - - - -	- - - - -	- - - - -	-	-	-	-	2		
TOTAL, SUBORDINATE OFFICERS - - - - -							214	7,227	-	12	876	-	-	-	-	170 Including 169 Naval Cadets, for training.	1,636	62	
WARRANT OFFICERS:																			
Gunners - - - - -	Sea Pay	Under 5 years' service	- 5 6	100 7 6	Tool Money to Carpenters, except when borne for disposal in the Reserve and Guard Ships at Home - - -	- 3	4 11 3												
		Over 5 " "	- 6 9	123 3 0															
		" 10 " "	- 7 9	141 8 9															
Boatswains - - - - -		" 15 " "	- 8 3	150 11 3	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	
Carpenters - - - - -	Harbour Pay.	Under 5 years' service	- 5 6	100 7 6	Allowance to each when in Charge of Stores in a Seagoing Ship in Commission - - -	- 6	9 2 6												
		Over 5 " "	- 6 -	100 10 -															
		" 10 " "	- 6 0	123 3 9															
		" 15 " "	- 7 3	132 6 3	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	
Gunner, serving as Inspecting Officer - - - - -	In Coast Guard Service on Shore - - - - -	- 7 6	136 17 6	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	-	-	-	-	-		
Chief Officers - - - - -	ditto - - - - -	- 6 -	109 10 -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	-	-	-	-	-		
TOTAL, WARRANT OFFICERS - - - - -							280	20,085	2,372	61	7,514	300	127	16,151	73	338	42,338		
TOTAL, COMMISSIONED, SUBORDINATE, and WARRANT OFFICERS—brought forward - - - - -							2,050	306,407	36,175	208	60,640	3,627	545	68,922	3,520	950	176,606	170	
														Including 169 Naval Cadets, for training.					

N.B.—Fractional parts of a Pound are not shown in the Totals of the several Ranks and Ratings.

\* The greater proportion of these are dispersed throughout the Fleet for disposal.

† Less, deductions on account of tuition at the rate of 9*l.* per annum from each cadet.

STATEMENT (A. 1)—continued.

SAILING VESSELS.		TROOP SHIPS (Imperial Service).				STORE SHIPS.			DRILL SHIPS.			COAST GUARD <i>on Shore.</i>			TROOP SHIPS (Indian Service).			TOTAL Number of each Rank.		TOTAL AMOUNT of EACH RANK.		TOTAL CHARGE.		RANK.		
Total per Annum.		No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		Pay.	Allow- ances.	£.	£.	£.	£.	
Pay.	Allow- ances.		Pay.	Allow- ances.		Pay.	Allow- ances.		Pay.	Allow- ances.		Pay.	Allow- ances.		Pay.	Allow- ances.		Pay.	Allow- ances.							
£.	£.		£.	£.		£.	£.		£.	£.		£.	£.		£.	£.		£.	£.							
072	046	87	10,424	1,612	23	4,708	440	28	10,064	429	01	26,835	-	105	20,304	1,460	3,045	680,874	52,845	742,719	TOTAL, COMMISSIONED OFFICERS—brought forward.					
SUBORDINATE OFFICERS:																										
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	216	6,800	-	6,800	Midshipmen.					
-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	365	-	16	1,168	-	1,168	Clerks.					
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	584	-	584	Navigating Midshipmen.					
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	164	-	164	Second Rates.	164				
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	876	-	876		876				
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180 (Including 160 for training).	1,928	-	1,928	Naval Cadets. (Vide page 172, for the number admitted during the year.)					
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Navigating Cadets.	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	912	-	912	Assistant Clerks.					
-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	365	-	463 (Including 160 Naval Cadets, for training).	12,531	-	12,531	TOTAL, SUBORDINATE OFFICERS.					
WARRANT OFFICERS:																										
566	37	27	3,819	105	5	707	27	22	2,710	9	-	-	-	35	4,312	114	853	107,202	3,645	110,847	Gunners.					
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Boatswains.	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Carpenters.	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Gunner, serving as Inspecting Officer.	
-	-	-	-	-	-	-	-	-	-	-	226	24,747	-	-	-	-	226	24,747	-	24,747	Chief Officers.					
566	37	27	3,819	105	5	707	27	22	2,710	9	226	24,747	-	35	4,312	114	1,084	131,949	3,645	135,594	TOTAL, WARRANT OFFICERS.					
1,638	983	114	23,243	1,717	28	5,415	467	50	13,074	438	317	61,582	-	145	25,071	1,574	4,632 (Including 160 Naval Cadets, for training).	834,354	56,400	800,844	TOTAL, COMMISSIONED, SUBORDINATE, and WARRANT OFFICERS—carried forward.					



PAY OF EACH RANK.		ALLOWANCES OF EACH RANK.			EFFECTIVE, FOR GENERAL SERVICE.			FIRST RESERVE SHIPS, including Tenders (formerly Coast Guard District Ships and Cruisers).			GUNNERY, and TRAINING SHIPS.			STATIONARY, RE-ENTRY, and DEPOT SHIPS, including Yachts.					
RANK.	Daily.		Annual.	Nature.	Daily.		Annual.	No. of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.		Number of each Rank.	Total per Annum.		No. of each Rank.	Total per Annum.	
	£. s. d.	£. s. d.	£. s. d.		£. s. d.	Pay.	Allowances.		Pay.	Allowances.		Pay.	Allowances.		Pay.	Allowances.		Pay.	Allowances.
TOTAL COMMISSIONED, SUBORDINATE, AND WARRANT OFFICERS—brought forward																			
PETTY OFFICERS AND SEAMEN, &c.:																			
Gratuities, to—																			
Head Naval Schoolmasters of Training Ships (5), and Gun- nery Ships 2																			
Ditto for Pupils Teachers in- structed																			
Men acting as Sick Berth At- tendants in Ships where such rating is not allowed																			
Additional Pay, to—																			
Gunnery Instructors																			
Seamen—Gunners 1st Class																			
2nd „																			
Trained Men in Gunnery																			
Bakers, and Torpedo-Men																			
Stoker Mechanics																			
Seamanship Instructors																			
Jolly-Instructors																			
Men acting as Vassal Schoolmasters																			
Men in charge of Seamen's La- bours in Ships where no Schoolmaster is allowed, nor any allowance paid for the performance of his duty																			
Lost Money, to—																			
Chief Carpenters' Mates, and other like Artificers																			
Coopers, and Cooper's Crews																			
Virtualling—Store, and Cooking Allowances, to—																			
Ship's Stewards																			
Ditto ditto Assistants																			
Ditto, Cooks																			
Additional Pay, to—																			
Gunnery Instructors																			
Seamen—Gunners 1st Class																			
2nd „																			
Trained Men in Gunnery																			
TOTAL, PETTY OFFICERS AND SEAMEN, &c.																			
TOTAL of all CLASSES (except Flag Officers, &c., and Boys)																			
Boys																			
At Rates, according to their Classes, viz., 1st Class, 10s. 12s. 11d., and 2nd Class, 9s. 6d. per annum																			
1st Year's																			
2nd ditto																			
3rd ditto																			
4th ditto																			
Allowance to Boys, 1st Class, doing the Duty of Buglers																			
TOTAL of all CLASSES (except Flag Officers, &c.)																			

N.B.—Fractional parts of a Pound are not shown in the Totals of the several Ranks and Ratings.

## ANALYTICAL STATEMENT (A. 1)—continued.

SURVEYING VESSELS.			TROOP SHIPS. (Imperial Service).			STORE SHIPS.			DRILL SHIPS.			COAST GUARD on Shore.			TROOP SHIPS (Indian Service).			TOTAL Number of each Rank.		TOTAL AMOUNT of EACH RANK.		TOTAL CHARGE.		RANK.	
Total per Annum.	No. of each Rank.	Total per Annum.	No. of each Rank.	Total per Annum.	No. of each Rank.	Total per Annum.	No. of each Rank.	Total per Annum.	No. of each Rank.	Total per Annum.	No. of each Rank.	Total per Annum.	No. of each Rank.	Total per Annum.	No. of each Rank.	Total per Annum.	No. of each Rank.	Pay.	Allowances.	Rank.	Pay.	Allowances.	£.	Total Commissioned, Sub- ordinate, and Warrant Officers—brought forward.	
£.		£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.		
993	114	23,243	1,717	24	5,415	467	50	13,074	458	317	51,562	-	-	145	23,071	1,574	* 4,632	894,354	56,490		890,844				
																		* Including 169 Naval Cadets, for training.							
PETTY OFFICERS AND SEAMEN, &c.:																									
10,404	417	399	24,657	429	91	5,590	157	113	8,870	800	-	-	-	-	615	36,946	1,874	14,507		1,020,713	61,560	1,082,273	Petty Officers, Leading Sea- men, &c.		
		325			72			98							505			16,383						Able, Ordinary, and 2nd Class Ordinary Seamen, &c.	
-	-	-	-	-	-	-	-	-	209	15,546	-	-	-	-	-	-	-	209	15,546	-	-	15,546	Chief Boatmen in charge of Stations.		
-	-	-	-	-	-	-	-	-	3,701	116,204	6,028	-	-	-	-	-	-	3,701	116,204	6,028	122,232	Chief Boatmen of Stations. Commissioned Boatmen of Sta- tions.			
-	-	-	-	-	-	-	-	-	13	655	-	-	-	-	-	-	-	13	655	-	-	655	Boatmen of Stations. Divisional Carpenters.		
10,404	417	724	24,657	429	163	5,590	197	211	8,870	800	3,943	192,765	6,028	1,130	36,916	1,874	34,873	1,153,418	67,568		1,221,006	TOTAL, PETTY OFFICERS ( AND SEAMEN, &c.			
32,942	1,140	934	47,901	2,113	191	11,895	691	291	22,553	1,928	4,300	181,287	6,028	1,205	62,017	3,448	39,565	1,877,772	124,078		2,111,850	TOTAL of all CLASSES (except Flag Officers, &c., and Boys).			
266	1	23	245	-	10	167	-	-	-	-	-	-	-	-	5	53	-	6,305 (including 2,700 for training.)	63,933	427	63,360	Boys.			
32,308	1,141	861	48,145	2,140	201	11,112	664	291	22,553	1,928	4,300	181,287	6,028	1,300	62,070	3,448	45,816 (including 169 Naval Cadets, and 2,700 Boys for training.)	2,050,705	124,505		2,175,210	TOTAL of all CLASSES (except Flag Officers, &c.)			
£. 33,769			£. 50,201			£. 11,776			£. 23,981			£. 190,315			£. 65,518										
FLAG OFFICERS AND SUPERINTENDENTS OF DOCKYARDS, &c., brought from page 149																		100	49,507	25,126	68,723	Flag Officers, &c., brought from page 149.			
TOTALS of all SERVICES																		46,000	2,094,302	140,631	2,243,933	TOTALS of all SERVICES.			

FOR ABSTRACT OF THE FOREGOING STATEMENT, see next page.

## ABSTRACT of the foregoing STATEMENT, showing the TOTAL NUMBER and AMOUNT

HEADS OF SERVICE.	FLAG OFFICERS, &c.			OFFICERS SUPERINTENDING DOCKYARDS AND NAVAL RESERVES.			COMMISSIONED OFFICERS, &c.			SUBORDINATE OFFICERS.			WARRANT OFFICERS.		
	No.	Pay.	Allowances.	No.	Pay.	Allowances.	No.	Pay.	Allowances.	No.	Pay.	Allowances.	No.	Pay.	Allowances.
FLAG OFFICERS, &c.	153	£. 33,488	£. 20,072	37	£. 10,109	£. 4,154	-	-	-	-	-	-	-	-	-
EFFECTIVE, for General Service	-	-	-	-	-	-	1,597	350,185	33,803	214	7,327	-	230	20,085	2,312
FIRST RESERVE SHIPS, including TENDERS (formerly Coast Guard District Ships and Cruisers)	-	-	-	-	-	-	225	52,259	3,267	12	876	-	61	7,514	30
GUNNERY, and TRAINING SHIPS	-	-	-	-	-	-	268	52,035	3,518	170	1,630	-	127	16,161	71
STATIONARY SHIPS, &c.	-	-	-	-	-	-	570	131,998	7,370	62	2,427	-	338	42,338	548
SURVEYING VESSELS	-	-	-	-	-	-	91	21,072	946	-	-	-	4	566	37
TROOP SHIPS (Imperial Service)	-	-	-	-	-	-	87	1,124	8,000	-	-	-	-	-	-
STORE SHIPS	-	-	-	-	-	-	23	4,708	1,000	-	-	-	-	-	-
DRILL SHIPS	-	-	-	-	-	-	28	10,004	429	-	-	-	22	2,710	1
TOTALS	153	34,488	20,072	37	10,109	4,154	-	642,645	51,385	438	12,100	-	823	102,890	2,350
Numbers and Amounts for Her Majesty's Fleet, as provided for in the body of the Estimate (page 7)	No. 153 - £. 54,400			No. 37 - £. 14,263			No. 2,880 - £. 694,030			No. 458 - £. 12,100 (including for Training, as above.)			No. 823 - £. 106,421		
COAST GUARD SERVICE (ON SHORE)	-	-	-	-	-	-	91	26,835	-	-	-	-	226	24,747	-
TROOP SHIPS (INDIAN SERVICE)	-	-	-	-	-	-	105	20,394	1,100	5	365	-	23	4,512	10



## NAVY STATEMENT (A. 1)—continued.

h CLASS, &amp;c., as provided for in the body of the Estimate, at pages 7 and 8.

OFFICERS AND SEAMEN.			TOTAL.			TOTAL.			Boys.			GRAND TOTAL.		HEADS OF SERVICE
Pay.	Allowances.	No.	Pay.	Allowances.	Pay and Allowances.	No.	Pay.	Allowances.	No.	Pay and Allowances.				
£.	£.		£.	£.	£.		£.	£.		£.				
-	-	100	43,597	25,126	68,723	-	-	-	190	68,723	FLAG OFFICERS, &c.			
669,195	41,935	22,528	1,055,692	78,110	1,123,802	3,131	33,330	193	25,659	1,167,325	EFFECTIVE, for General Service.			
66,389	2,593	2,287	127,038	6,220	133,258	260	2,864	11	2,556	136,133	FIRST RESERVE SHIPS and TENDERS (formerly Coast Guard District Ships and Cruisers).			
83,574	9,849	3,032	153,396	13,440	166,836	2,780 (including 2,700 for Training.)		25,622	217	5,821	192,675	GUNNERY, and TRAINING SHIPS.		
115,079	3,376	4,339	201,842	11,294	303,136	53	546	5	4,392	303,687	STATIONARY SHIPS, &c.			
10,404	417	404	32,042	1,400	33,442	25	266	1	429	33,709	SURVEYING VESSELS.			
24,657	429	838	47,000	2,140	50,046	23	245	-	861	50,291	TROOP SHIPS (Imperial Service).			
5,690	197	191	11,005	664	11,669	10	107	-	201	11,776	STORE SHIPS.			
8,870	890	291	22,553	1,328	23,881	-	-	-	291	23,881	DRILL SHIPS.			
983,707	60,686	34,100	1,785,065	139,728	1,924,793	6,300 (including 2,700 for Training.)		62,880	427	40,400	1,988,100	TOTALS.		
No. 34,100 - £. 1,924,793			No. 6,300 - £. 63,307 (including Boys for Training, as above.)			No. 40,400 - £. 1,988,100			Numbers and Amounts for Her Majesty's Fleet, as provided for in the body of the Estimate (page 7).					
												COAST GUARD SERVICE ON SHORE. Total Number and Amount, as provided for in the body of the Estimate (page 7).		
TOTAL for HER MAJESTY'S FLEET and COAST GUARD SERVICE, as provided for in the body of the Estimate (page 7) -												No. 44,700	£. 2,178,415	TROOP SHIPS (INDIAN SERVICE). Total Number and Amount as provided for in the body of the Estimate (page 8).
36,916			1,874	1,295	62,917	3,418	65,165	-	-	No. 1,300	£. 65,518			
TOTAL of all SERVICES, provided for in the body of the Estimate (page 8) -												No. 46,000	£. 2,243,933	
Add,—For the Contingent Employment of Additional Commissioned Officers now on Half-pay, as shown in the body of the Estimate (page 6) -													5,000	
Special Pay and Allowances, as per Statement (A. No. 2) annexed (page 168) -													29,773	
Estimated Cost of Good Conduct Pay, &c., as shown in the body of the Estimate (page 8) -													50,000	
Estimated Expense of raising Men and Boys for the Fleet, as shown in the body of the Estimate (page 8) -													3,500	
Estimated Expense of Competitive Prize-firing with Rifled Great Guns, &c., ditto (page 8) -													850	
For improved pay to Engineer Officers, to Engine Room Artificers, and to Seamen Class Men who re-engage for a second period (page 7) -													16,100	
TOTAL AMOUNT, as provided for in the body of the Estimate, of "WAGES, &c. to SEAMEN" (page 8) -												£.	2,349,156	
Deduct, as follows, viz.:—														
The Pay and Allowances of Officers superintending Her Majesty's Dockyards and Naval Establishments, and their Retirees; provision for the same being made in the Estimate for Dockyards, &c. (Vote 6, page 31), as part of the cost of those Establishments -													12,132	
The Pay and Allowances of Officers and Men (except Marines) belonging to the Navy, borne on Ships' Books for Service in Naval Establishments on Shore; provision for the same being made in the respective Estimates for such Establishments (Votes 3 to 14).—See Detailed List at page 162 -													37,897	
The proportion of the Pay and Allowances of the Crews (except Marines) of the five Troop Ships for Indian Service, which will be defrayed by the Indian Government, as shown in the body of the Estimate (page 8) -													61,360	
													111,389	
NET TOTAL WAGES, &c. to SEAMEN in FLEET and COAST GUARD SERVICE, &c. -												£.	2,237,767	

## APPENDIX, No. 1.—EXPLANATORY STATEMENT (A. 1)—continued.

LIST of PERSONS, belonging to the Navy, borne on SHIPS' BOOKS for SERVICE in NAVAL SHORE ESTABLISHMENTS, whose Pay and Allowances are Deducted from Vote 1 (See page 8), and Provided for in the Votes for such Establishments to which they properly belong, as specified against them.

No.	RANK.	Ship in which Borne.	For what Service Borne.	Pay and Establishments.
				£. s. d.
1	Deputy Inspector General of Hospitals and Fleets	H.M.S. Fisgard	For Service in Medical Director General's Department, Admiralty	Pay - 633 10 -
1	Chief Inspector of Machinery Afloat	ditto	For Service in Department of Controller of Navy, Whitehall	" - 456 5 -
1	Gunner	ditto	For the Professional Examination of Gunners' Naval Store Accounts	" - 139 17 6
			TOTAL	- - - £. 1,229 12 6
1	Rear Admiral	H.M.S. Penelope	Superintendent of Naval Reserves	Pay - 1,995 - -
1	Secretary	ditto		Table Money - 273 15 -
			TOTAL	- - - £. 1,963 9 7
1	Staff Commander	H.M.S. Fisgard	(Superintendent of Compasses, Hydrographic Department)	Pay - 403 10 -
1	Staff Commander	ditto	Compass Department	" - 310 5 -
1	Lieutenant	ditto	Naval Assistants to Hydrographer	" - 182 10 -
4	Staff Commanders	ditto	ditto	" - 1,332 5 -
2	Navigating Lieutenant	ditto	ditto	" - 237 5 -
1	Paymasters	ditto	ditto	" - 757 7 6
1	Chaplain and Naval Instructor	ditto	Inspector of Naval Schools	" - 474 10 -
1	Staff Commander	ditto	Greenwich Royal Naval College	" - 365 - -
1	Engineer	ditto	ditto	" - 164 5 -
1	Chaplain and Naval Instructor	ditto	ditto	" - 438 - -
2	Engineers	ditto	ditto	" - 328 10 -
4	Naval Instructors	ditto	ditto	" - 1,284 10 -
1	Engine Room Artificer	ditto	ditto	" - 164 18 9
1	Domestic, 2nd Class	ditto	ditto	" - 24 6 8
1	Chief Officer in Command	ditto	(for Service in "Arros," Gunboat)	" - 1,015 - -
1	Engineer	ditto	ditto	" - 182 10 -
1	Engine Room Artificer	ditto	ditto	Pay - 164 18 9
1	Leading Stoker	ditto	ditto	" - 41 2 1
1	Chief Petty Officer	ditto	ditto	" - 70 3 9
1	Carpenter's Crew	ditto	ditto	Allowance - 24 19 7
3	Seamen	ditto	ditto	Pay - 86 13 9
2	Stokers	ditto	ditto	" - 71 - -
1	Officer's Servant	ditto	ditto	" - 19 10 2
1	Deputy Inspector General	H.M.S. Duke of Wellington	Professor of Naval Hygiene at Netley Hospital	" - 678 15 -
35			TOTAL	- - - £. 7,708 18 7
1	Chief Engineer	H.M.S. Asia	Chief Engineer of Portsmouth Dockyard	Pay
1	Chief Engineer	ditto	1st Assistant to ditto (Assistant Inspector of Machinery)	"
1	Engineer	ditto	2nd Assistant to ditto	"
1	Assistant Engineer, 2nd Class (Acting)	H.M.S. Boscawen	Portland (in charge of Coaling and Watering Depot)	"
1	Boatswain	H.M.S. Aboukir	Jamaica Dockyard	"
1	Carpenter	ditto	ditto	"
1	Chief Carpenter	H.M.S. Pyramus	Halifax Yard	Pay
1	Boatswain	ditto	ditto	"
2	Warrant Officers' Servants	ditto	ditto	"
1	Armourer	H.M.S. Bellerophon	ditto	"
1	Blacksmith	ditto	ditto	"
1	Plumber	ditto	ditto	"
1	Engineer	ditto	Halifax Yard Craft, "No. 3"	"
1	Engine Room Artificer	ditto	ditto	Pay
15			Carried forward	- - - £. 12,937 6 5

## APPENDIX, No. 1.—EXPLANATORY STATEMENT (A. 1)—continued.

R A N K.	Ship in which Borne.	For what Service Borne.	Pay and Established Allowances.	
			£. s. d.	
		Brought forward	1,957 6 3	
Chief Quartermaster	H.M.S. Bellerophon	Halifax Yard Craft, "No. 3"	Pay	47 2 11
Leading Stokers	ditto	ditto	"	88 4 2
Stokers	ditto	ditto	"	73 - -
Paymaster	H.M.S. Wolverene	Sydney, New South Wales { (acting as Naval, Medical, and Victualling Storekeeper) - }	"	600 14 7
Chief Gunner	ditto	ditto { (in charge of Naval Ordnance Depôt - }	"	164 5 -
Gunner's Mate	ditto	ditto { (assisting in issue and receipt of Gunner's Stores at Depôt) - }	"	34 19 7
Chief Carpenter's Mate	ditto	Port Jackson { (in charge of Government property on Garden Island) - }	Allowance	54 15 - 9 2 6
Carpenter	H.M.S. Undaunted	Naval Yard, Trincomalee	Pay	150 11 3
			Allowance	4 11 3
Chief Engineer	H.M.S. Hibernia	Superintending Engineer, Malta Dockyard	Pay	328 10 -
Staff Surgeon	ditto	For Service in Malta Dockyard	"	401 10 -
Servant to ditto	ditto	ditto	"	24 6 8
Ward Room Officers' Servant	ditto	{ Servant to Flag Lieutenant to the Admiral Superintendent of Malta Dockyard - }	"	19 15 5
Chief Engineer	H.M.S. Express	Gibraltar Dockyard (in charge of Factory)	"	219 - -
Engine Room Artificers	ditto	ditto (for Service in Factory)	"	182 10 -
Chief Inspector of Machinery Afloat	H.M.S. Indus	{ 1st Assistant to Chief Engineer of Devonport Yard for service in Keyham Yard - }	"	456 5 -
Engineer	ditto	{ 2nd Assistant to Chief Engineer of Devonport Yard for service in Keyham Yard - }	"	182 10 -
Chief Boatswain	ditto	ditto (acting as Master Rigger)	"	164 5 -
Seaman	H.M.S. Nankin	Keeper of "Hope," Yard Craft at Pembroke	"	28 17 11
Chief Inspector of Machinery Afloat	H.M.S. Pembroke	Chief Engineer of Chatham Dockyard	"	456 5 -
Engineer	ditto	Assistant to ditto	"	182 10 -
Chief Gunner	ditto	For Service in Chatham Dockyard	"	104 5 -
Boatswain	ditto	ditto	"	136 17 6
Inspector of Machinery Afloat	H.M.S. Duncan	Chief Engineer of Sheerness Dockyard	"	456 5 -
Inspector of Machinery Afloat	H.M.S. Audacious	Hong Kong Dockyard { (for Service in Steam Factory) - }	"	456 5 -
Staff Commander	H.M.S. Victor Emanuel	ditto (acting as Master Attendant)	"	365 - -
Chaplain	ditto	ditto	"	219 - -
Paymaster	ditto	ditto { (acting as Naval and Victualling Storekeeper) - }	"	365 - -
Engineers	ditto	ditto (for Service in Steam Factory)	"	365 - -
Engineer	ditto	ditto { (for Service in Steam Factory, and re-venting heavy guns) - }	"	182 10 -
Carpenter	ditto	ditto { (acting as Assistant Master Shipwright) - }	Allowance	141 8 9 4 11 3
Boatswain	ditto	ditto	Pay	150 11 3
Blacksmith	ditto	ditto { (acting as Smith in Master Shipwright's Department) - }	"	48 13 4
Carpenter's Crew	ditto	ditto (for Saw Mills)	Allowance	34 19 7 4 11 3
Private, Royal Marines	ditto	ditto { (as Hammerman in Master Shipwright's Department) - }	Pay	21 5 10
Quartermasters	ditto	ditto	"	79 1 8
Carpenter's Mate	ditto	ditto (for Service in Storekeeper's Department)	Allowance	50 3 9 4 11 3
Leading Stoker	ditto	ditto	Pay	44 2 1
Carpenter's Crew	ditto	ditto	Allowance	34 19 7 4 11 3
Engine Room Artificers	ditto	ditto	Pay	419 15 -
Blacksmith	ditto	ditto (for Service in Steam Factory)	"	48 13 4
Leading Stokers	ditto	ditto	"	220 10 5
Stokers	ditto	ditto	"	109 10 -
Coxswain of Launch	ditto	ditto (for Service in Yard Steam Launch)	"	39 10 10
Stokers	ditto	ditto	"	73 - -
		Carried forward	£.	10,075 10 5

Carried  
to  
Vote 6.

APPENDIX, No. 1.—EXPLANATORY STATEMENT (A. 1)—*continued.*

No.	R A N K.	Ship in which Borne.	For what Service Borne.	Pay and Established Allowances.		
					£.	s. d.
74	- - - - -	- - - - -	- - - - - Brought forward	- - -	10,075	10 5
1	Chief Boatwain's Mate	H.M.S. Victor Emanuel	Hong Kong Dockyard (for charge of Coal Lighter)	Pay	47	2 11
4	Boatmen	- ditto	- ditto - { (for Master Shipwright's Boat) - }	"	91	5 -
2	Boatmen	- ditto	- ditto - (for Chaplain's Boat)	"	45	12 6
1	Paymaster	- ditto	Naval Establishment at Shanghai	"	273	15 -
2	Ship's Stewards	- ditto	- ditto ditto - - - - - {	Allowances	100	7 6
1	Boatswain	H.M.S. Repulse	Esquimalt Yard, Vancouver's Island	Pay	150	11 3
1	Leading Stoker	- ditto	For charge of Fire Engine, Esquimalt	"	44	2 1
1	Staff Surgeon	H.M.S. Terror	In charge of Seamen in Bermuda Dockyard	"	365	- -
1	Servant to ditto	- ditto	- - - - -	"	19	15 5
1	Chief Engineer	- ditto	Bermuda Dockyard	"	383	5 -
1	Engineer	- ditto	- ditto - - - - -	"	182	10 -
1	Boatswain	- ditto	- ditto - - - - -	"	141	8 9
1	Warrant Officer's Servant	- ditto	- ditto - - - - -	"	19	15 5
1	Ropemaker	- ditto	- ditto - - - - - { For Service in Master Attendant's Department. }	"	44	2 1
1	Sailmaker's Mate	- ditto	- ditto - - - - - { For Service in "Spitfire," Dockyard Craft. }	"	36	10 -
1	Leading Stoker	- ditto	- ditto - - - - - { For Service in Foreman of Shipwright's Department. }	"	44	2 1
1	Blacksmith	- ditto	- ditto - - - - -	"	48	13 4
1	Armourer	- ditto	- ditto - - - - -	"	48	13 4
1	Blacksmith's Crew	- ditto	- ditto - - - - -	"	30	8 4
1	Tinsmith	- ditto	- ditto - - - - -	"	30	8 4
9	Leading Stokers	- ditto	- ditto - - - - - { For Service in Factory. }	"	396	18 9
2	Stokers	- ditto	- ditto - - - - -	"	73	- -
1	Quartermaster	- ditto	Floating Dock, Bermuda	"	39	10 10
4	Leading Stokers	- ditto	- ditto - - - - -	"	176	8 4
16	Stokers	- ditto	- ditto - - - - -	"	584	- -
1	Leading Stoker	- ditto	{ For Service in "Bermuda," Mooring Lighter, at Bermuda }	"	44	2 1
1	Staff Commander	H.M.S. Flora	Cape of Good Hope Dockyard	"	401	10 -
1	Chief Engineer	- ditto	- ditto ditto - - - - -	"	383	5 -
1	Chaplain	- ditto	- ditto ditto - - - - -	"	292	- -
1	Boatswain	- ditto	- ditto ditto - - - - -	"	150	11 3
1	Carpenter	- ditto	- ditto ditto - - - - - {	Allowance	150	11 3
1	Engine Room Artificer	- ditto	- ditto ditto - - - - -	Pay	4	11 3
2	Sailmakers	- ditto	- ditto ditto - - - - -	"	104	18 9
6	Carpenters' Mates	- ditto	- ditto ditto - - - - - {	Allowances	88	4 2
2	Blacksmiths	- ditto	- ditto ditto - - - - -	Pay	301	2 6
1	Plumber	- ditto	- ditto ditto - - - - -	"	27	7 6
1	Head Krooman	- ditto	- ditto ditto - - - - -	"	97	6 8
2	Seamen	- ditto	- ditto ditto - - - - -	"	54	15 -
				"	34	19 7
				"	45	12 6
152	- - - - -	- - - - -	- - - - - Carried forward	- - - £.	15,774	1 8

Carried  
to  
Vote 6.



## APPENDIX, No. 1.—EXPLANATORY STATEMENT (A. 1)—continued.

R A N K.	Ship in which Borne.	For what Service Borne.	Pay and Established Allowances.	
			£. s. d.	
		Brought forward	15,774 1 8	
Second Head Kroomen	H.M.S. Flora	Cape of Good Hope Dockyard	Pay 48 13 4	
Kroomen	ditto	ditto ditto	" 284 7 11	
Private, Royal Marines	ditto	ditto ditto	" 21 5 10	
Engineer	ditto	ditto ditto	" Allowance 182 10 -	
Boatswain	ditto	ditto ditto	Pay 100 7 6	
Boatswain's Mate	ditto	ditto ditto	" For Service in "African," Tug. 39 10 10	
Leading Stoker	ditto	ditto ditto	" 44 2 1	
Able Seaman	ditto	ditto ditto	" 28 17 11	
Kroomen	ditto	ditto ditto	" 33 9 2	
Quartermaster	ditto	{ For Service in "Swift," Mooring Lighter, at Cape of Good Hope	" 39 10 10	
Petty Officer, 1st Class	ditto	In charge of Tank Vessel, Simon's Bay	" 39 10 10	
		TOTAL	£. 16,654 12 11	Carried to Vote 6.
Paymaster	H.M.S. Aboukir	{ In charge of Naval and Victualling Stores at Jamaica	Pay 600 14 7	
Servant to ditto	ditto		" 19 15 5	
Chief Carpenter	H.M.S. Asia	In charge of Tanks, Royal Clarence Yard	{ Allowance 164 5 -	
Coopers	H.M.S. Flora	Cape of Good Hope Victualling Yard	{ Pay 91 5 -	
Cooper	H.M.S. Terror	Bermuda Victualling Yard	{ Allowances 6 1 8	
Paymaster	H.M.S. Audacious	In charge of Victualling Depôt at Yokohama	{ Pay 45 12 6	
Ship's Steward	ditto	Victualling Depôt at Yokohama	{ Allowance 3 - 10	
Ditto (Acting)	ditto	ditto ditto	{ Pay 36 10 -	
Cooper	ditto	ditto ditto	{ Allowance 27 7 6	
Japanese Head Coolie	ditto	ditto ditto	{ Pay 41 1 3	
Seaman	H.M.S. Repulse	{ Esquimalt Victualling Establishment (boatman to Storekeeper)	{ Allowance 3 - 10	
Private, Royal Marines	ditto	{ Esquimalt Victualling Establishment (employed in Storehouses)	" 20 8 -	
		TOTAL	£. 1,805 17 2	Carried to Vote 7.
Staff Surgeon in lieu of a Surgeon	H.M.S. Boscawen	Sick Quarters, Portland	Pay 401 10 -	
Sick Berth Steward	ditto	ditto ditto	" 44 2 1	
Sick Berth Attendant	ditto	ditto ditto	" 31 18 9	
Fleet Surgeon	H.M.S. Britannia	Cadets' Sick Quarters, Dartmouth	" 456 5 -	
Sick Berth Steward	ditto	ditto ditto	" 44 2 1	
Fleet Surgeon in lieu of a Staff Surgeon	{ H.M.S. Duke of Wellington	Lisbon Hospital	" 547 10 -	
Sick Berth Steward	ditto	ditto	" 44 2 1	
Sick Berth Attendant	ditto	ditto	" 31 18 9	
Staff Surgeon	H.M.S. Audacious	Yokohama Naval Hospital	" 328 10 -	
Surgeon	ditto	ditto ditto	" 255 10 -	
Sick Berth Steward	ditto	ditto ditto	" 44 2 1	
Sick Berth Attendant	ditto	ditto ditto	" 31 18 9	
Assistant Sick Berth Attendant	ditto	ditto ditto	" 24 6 8	
Ward-room Officer's Servant	ditto	ditto ditto	" 19 15 5	
Bombardier, Royal Marine Artillery	ditto	ditto ditto	" 39 10 10	
Privates, Royal Marines	ditto	ditto ditto	" 85 3 4	
		Carried forward	£. 2,430 5 10	Carried to Vote 8.

## APPENDIX, No. 1.—EXPLANATORY STATEMENT (A. 1)—continued.

No.	R A N K.	Ship in which Borne.	For what Service Borne.	Pay and Established Allowances.	
					£. s. d.
19	- - - - -	- - - - -	- - - - - Brought forward - - -	- - -	2,430 5 10
1	Staff Surgeon - - -	H.M.S. Pembroke -	Melville Hospital at Chatham - - -	Pay -	401 10 -
1	Fleet Surgeon - - -	H.M.S. Duncan -	Marines, Deal - - -	" -	547 10 -
1	Staff Surgeon in lieu of a } Surgeon - - - }	- - ditto - - -	- - ditto - - -	" -	328 10 -
1	Sick Berth Steward - -	H.M.S. Bellerophon	Halifax, Sick Quarters - - -	" -	44 2 1
1	Serjeant, Royal Marines -	H.M.S. Flora -	Cape of Good Hope Hospital - - -	" -	39 10 10
5	Privates, Royal Marines -	- - ditto - - -	- - ditto - ditto - (as nurses) - -	" -	106 9 2
1	Staff Surgeon in lieu of a } Surgeon - - - }	H.M.S. Repulse -	Naval Hospital, Esquimalt, Vancouver's Island -	" -	365 - -
1	Sick Berth Steward - -	- - ditto - - -	- - ditto - - (in charge of Buildings, &c.)	" -	44 2 1
31			TOTAL - - -	£.	4,307 - -
1	Chaplain and Naval In- } structor - - - }	{ H.M.S. Duke of } Wellington - }	{ Marine Artillery—Portsmouth (Eastney and Fort } Cumberland) - - - }	Pay -	310 5 -
1	Chaplain and Naval In- } structor - - - }	H.M.S. Duncan -	Marines—Walmer - - -	" -	328 10 -
2			TOTAL - - -	£.	638 15 -
1	Engineer - - -	H.M.S. Fisgard -	{ Superintending the Construction of the Engines } of H.M.S. Pelican - - - }	Pay -	182 10 -
1	Ditto - - -	H.M.S. Indus -	{ Superintending the Construction of the Engines } of H.M.S. Nelson and Emerald - - - }	" -	182 10 -
2			TOTAL - - -	£.	365 - -
1	Private, Royal Marines -	H.M.S. Flora -	Cape of Good Hope—Naval Yard - - -	Pay -	21 5 10
1	Boatswain - - -	H.M.S. Terror -	{ In charge of Seamen employed on Works at } Bermuda - - - }	" -	150 11 3
50	Petty Officers and Seamen -	- - ditto - - -	Employed as Workmen and Artificers - - -	" -	1,543 12 11
1	Captain, Royal Marines -	- - ditto - - -	{ In charge of Marines employed on Works at } Bermuda - - - }	" -	211 7 11
2	Lieutenants, Royal Marines	- - ditto - - -	- - - - -	" -	279 15 -
5	Serjeants, Royal Marines -	- - ditto - - -	- - - - -	" -	197 14 2
3	Corporals, Royal Marines -	- - ditto - - -	Employed as Artificers - - -	" -	82 2 6
98	Privates, Royal Marines -	- - ditto - - -	- - - - -	" -	2,086 11 8
1	Bugler, Royal Marines -	- - ditto - - -	For Service with Marine Artificers - - -	" -	22 16 3
1	Ship's Steward - - -	- - ditto - - -	- - ditto - ditto - - -	{ Allowance -	36 10 - 27 7 6
1	Serjeant, Royal Marines -	- - ditto - - -	For Clerk of Works' Office - - -	Pay -	39 10 10
1	Engine Room Artificer -	- - ditto - - -	- - - - -	" -	91 5 -
1	Stoker - - -	- - ditto - - -	Dredging operations at Bermuda - - -	" -	36 10 -
8	Seamen - - -	- - ditto - - -	- - - - -	" -	231 3 4
1	Leading Stoker - - -	- - ditto - - -	For service in the Tug "Clover" - - -	" -	44 2 1
175			TOTAL - - -	£.	5,096 6 3

Carried  
to  
Vote 8.Carried  
to  
Vote 9.Carried  
to  
Vote 10.Carried  
to  
Vote 11.

## APPENDIX, No. 1.—EXPLANATORY STATEMENT (A. 1)—continued.

RANK.	Ship in which Borne.	For what Service Borne.	Pay and Established Allowances.		
Fleet Surgeon - - -	H.M.S. Audacious -	Special Service, Lock Hospital, China and Japan -	Pay -	£. s. d.	Carried to Vote 12.
				547 10 -	
		TOTAL - - -	£.	547 10 -	
Ship's Corporals - - -	H.M.S. Flora - -	Cape of Good Hope Naval Prison - - -	Pay -	146 - -	Carried to Vote 13.
Master at Arms - - -	- - ditto - - -	- - ditto - - - ditto - - -	" -	91 5 -	
3rd Class Domestic - - -	- - ditto - - -	- - ditto - - - ditto - - -	" -	19 15 5	
Master at Arms - - -	{ H.M.S. Victor Emanuel - - }	Hong Kong Naval Prison - - -	" -	91 5 -	
Ship's Corporals - - -	- - ditto - - -	- ditto - ditto - - -	" -	146 - -	
Serjeant, Royal Marines -	H.M.S. Terror - -	Bermuda Naval Prison - - -	" -	39 10 10	
Ship's Corporals - - -	- - ditto - - -	- - ditto - - -	" -	109 10 -	
		TOTAL - - -	£.	643 6 3	
Kroomen - - -	H.M.S. Flora - -	Admiralty House and Garden, Cape of Good Hope -	Pay -	59 6 3	Carried to Vote 14.
Gardener - - -	H.M.S. Terror - -	Commander-in-Chief's Residence, Bermuda - - -	" -	24 6 8	
Gardener - - -	H.M.S. Bellerophon -	- ditto - ditto - Halifax - - -	" -	24 6 8	
		TOTAL - - -	£.	107 19 7	

## A B S T R A C T.

Number of Vote to which Carried.	SEAMEN.		MARINES.	
	Number.	Amount.	Number.	Amount.
		£. s. d.		£. s. d.
3	3	1,286 12 6	—	—
4	2	1,969 9 7	—	—
5	35	7,783 12 6	—	—
6	179	16,612 1 3	2	42 11 8
7	12	1,784 11 4	1	21 5 10
8	20	4,036 5 10	11	270 14 2
9	2	638 15 -	—	—
10	2	365 - -	—	—
11	63	2,161 2 1	112	2,935 4 2
12	1	547 10 -	—	—
13	11	603 15 5	1	39 10 10
14	4	107 19 7	—	—
	334	37,897 15 1	127	3,309 6 8

£. s. d.  
 TOTAL No. 461 - - 41,206 1 9

{ Amount (41,206 £.) deducted at the foot of the Estimate for Vote No. 1, pp. 8 and 9.

## Appendix, No. 2.

## EXPLANATORY STATEMENT (A. 2).

SPECIAL PAY and ALLOWANCES to OFFICERS and Others for the Particular Services specified.

[Note.—The following, being of an exceptional character, are not included with the Pay and *Established* Allowances of the Fleet, &c., in the previous portion of this Statement.]

Numbers.		R A N K.	DESCRIPTION OF PAY, &c.	TOTAL AMOUNT.	
1876-77.	1877-78.			1877-78.	1876-77.
				£. s. d.	£. s. d.
1	—	Vice Admiral of Great Britain and Ireland.	By Patent	No longer required	434 1 9
1	—	Rear Admiral of Great Britain and Ireland.			342 9 —
1	1	Naval Aides-de-Camp to Her Majesty	Principal	Daily. £. 1 — — Annual. £. 365 — —	365 — —
6	6	— — — — —	Senior	— 10 — 182 10 —	1,095 — —
		RIO DE JANEIRO:			
1	1	Navigating Lieutenant borne on the Books of Her Majesty's Ship "Volage."	Allowance, in addition to his Pay, for charge of Naval Stores	60 — —	60 — —
1	1	Paymaster of - ditto - ditto	Allowance, in addition to his Pay, for charge of Victualling Stores	60 — —	60 — —
		VALPARAISO:			
1	1	Staff Commander of Her Majesty's Ship "Nereus," Store Depôt at Valparaiso.	Allowance, in addition to his Pay, for charge of Naval Stores	60 — —	60 — —
1	1	Assistant Paymaster	- - ditto - - - ditto - - -	60 — —	60 — —
1	1	Staff Surgeon of - ditto - at ditto	Allowance, in addition to his Pay, for charge of Medicines, &c., for issue to the Squadron on the Pacific Station	20 — —	20 — —
		ZANZIBAR:			
1	1	Navigating Lieutenant of Her Majesty's Ship "London."	Allowance, in addition to his Pay, for charge of Naval Stores	60 — —	60 — —
1	1	Paymaster - of ditto	Allowance, in addition to his Pay, for charge of Victualling Stores	60 — —	60 — —
1	1	Surgeon - of ditto	Allowance, in addition to his Pay, for charge of Medical Stores	30 — —	30 — —
1	1	Chief Engineer of ditto	Allowance, in addition to his Pay, for charge of Workshop, and Engineers' Stores	60 — —	60 — —
1	1	Petty Officer	Store Issuer; Allowance, in addition to his Pay, of 4 d. a day, or 6 l. 1 s. 8 d. a year	6 1 8	6 1 8
		HONG KONG:			
1	1	Navigating Officer of Her Majesty's Ship "Victor Emanuel."	Allowance, in addition to his Pay, of 100 l. a year, for charge of Naval Stores, and for acting as Harbour Master	100 — —	100 — —
		SHANGHAI:			
1	1	Assistant Paymaster (additional), employed as Senior Officer's Clerk, and borne in the Senior Officer's Ship on the Station.	Allowance, in addition to his Pay, of 2 s. 6 d. a day, or 45 l. 12 s. 6 d. a year	45 12 6	45 12 6
		ASCENSION:			
—	—	Officers, Seamen, and Marines, borne on the books of Her Majesty's Ship "Flora," for service at Ascension.	Extra Pay and Special Allowances for performing garrison duties at Ascension, and for services connected with the Victualling, Store, and Coaling, &c. Depôts, and Hospital	2,500 — —	2,500 — —
		Persons, not belonging to the Navy, employed in Store Depôts, &c.			
			£. s. d.		
			Pay at the rate of 5 s. a day, or Allowance in lieu of Fuel and Lights at the rate of 6 d. a day, or	91 5 —	— a year
			— — — — —	9 2 6	—
			Allowance for charge of Stores at the rate of 1 s. a day, or	18 5 —	—
			Allowance to meet the increased cost of living, at the rate of 3 s. a day, or	54 15 —	—
			— — — — —	173 7 6	—
1	1	Dispenser for Hospital			
			£. s. d.		
			Pay at the rate of 1 s. a day, or	18 5 —	— a year
			Pay at the rate of 100 l. to 150 l.	100 — —	—
			Pay at the rate of 5 s. a day, or	91 5 —	—
			Pay at the rate of 6 s. a day, or	109 10 —	—
			Pay at the rate of 6 s. a day, or	109 10 —	—
			Pay at rates varying from 6 d. a day, or 9 l. 2 s. 6 d. a year, to 1 s. 8 d. a day, or 30 l. 8 s. 4 d. a year	517 1 8	—
1	1	Matron for Hospital			
1	1	Farm Bailiff			
1	1	Hospital Clerk			
1	1	Cooper			
1	1	Store Porter			
34	34	Kroomen, Africans, &c.			
			Carried forward	£. 5,700 13 4	6,477 4 1



## APPENDIX, No. 2.—EXPLANATORY STATEMENT (A. 2)—continued.

Numbers.		RANK.	DESCRIPTION OF PAY, &c.	TOTAL AMOUNT.	
1876-77.	1877-78.			1877-78.	1876-77.
		SPECIAL PAY AND ALLOWANCES—continued.		£. s. d.	£. s. d.
			Brought forward - - -	5,700 13 4	6,477 4 1
		HER MAJESTY'S SHIP "EXCELLENT":			
1	1	Supernumerary Gunner - -	Allowance, in addition to his Pay, of 2s. 6d. for every hour he may be employed instructing Seamen in the use of Mr. Denayrouze's Diving Apparatus, under Water - - -	25 - -	25 - -
		HER MAJESTY'S SHIP "CAMBRIDGE":			
1	1	Gunner - - - - -	Allowance, in addition to his Pay, of 2s. 6d. for every hour he may be employed instructing Seamen in the use of Mr. Denayrouze's Diving Apparatus, under Water - - -	25 - -	25 - -
1	1	Corporal, Royal Marines - -	Allowance, in addition to his Pay, of 4d. a day, or 6l. 1s. 8d. a year, as Bugle Instructor to Boys under training in "Foudroyant" - -	6 1 8	6 1 8
		HER MAJESTY'S SHIP "BRITANNIA":			
1	1	Principal Naval Instructor (Civilian)	Salary - - - - -	650 - -	650 - -
1	1	Second Naval Instructor - -	Allowance, in addition to his Pay, in lieu of 9l. a year for each Naval Cadet instructed - -	200 - -	200 - -
8	8	Junior Naval Instructors - -	Allowance to each, in addition to his Pay, of 125l. a year as Tuition Money - - -	1,000 - -	1,000 - -
2	2	French and Drawing Masters (Civilians).	Salary, at the rate of 400l. a year each, for instructing Naval Cadets - - -	800 - -	800 - -
2	2	Assistant French and Drawing Masters (Civilians).	Salary, at the rate of 200l. a year each for instructing Naval Cadets - - -	400 - -	400 - -
1	1	Instructor in Latin (Civilian) -	Salary - - - - -	200 - -	200 - -
1	1	Sailmaker - - - - -	Allowance, in addition to his Pay, of 6d. a day, or 9l. 2s. 6d. a year, for instructing Naval Cadets in Sailmaking - - -	9 2 6	9 2 6
1	1	Serjeant, Royal Marines - -	Allowance, in addition to his Pay, of 1s. 6d. a day, or 27l. 7s. 6d. a year, as Gymnasium Instructor to Naval Cadets - - -	27 7 6	27 7 6
		HER MAJESTY'S TRAINING SHIPS:			
5	5	Chaplains and Naval Instructors of Her Majesty's Training Ships for Boys, viz.:—"Boscawen," "Ganges," "Implacable," "Impregnable," and "St. Vincent."	Allowance to each, in addition to his Pay, of 60l. a year, in lieu of Tuition Money - - -	300 - -	300 - -
1	1	Inspecting Captain of the Training Ships.	Extra Command Money, at the rate of 8s. a day, while absent with the Training Brigs, cruising } - - -	12 - -	12 - -
5	5	Bandmasters in the above Ships -	Allowance to each, in addition to his pay, of 6d. a day, or 9l. 2s. 6d. a year, for instructing the Band Boys in music - - -	45 12 6	45 12 6
5	5	Non-Commissioned Officers, Royal Marines, in the above Ships.	Allowance to each, in addition to his Pay, of 6d. a day, for six days in the week, as Gymnastic Instructor - - -	39 2 6	39 2 6
5	5	Head Tailors in the above Ships -	Allowance to each, in addition to his Pay, of 6d. a day, for Instructing Boys - - -	45 12 6	45 12 6
1	1	Bandmaster of Plymouth Division of Royal Marines.	Annual Gratuity for inspecting and superintending the Bands in the Training Ships - -	25 - -	25 - -
-	-	District Paymaster of Coast Guard	Allowance at the rate of 10l. per annum (2l. 10s. for auditing each quarterly account of the Boy's Fund in the above Ships and in the "Britannia") - - -	60 - -	60 - -
			Carried forward - - - £.	9,570 12 6	10,347 3 3

## APPENDIX, No. 2.—EXPLANATORY STATEMENT (A. 2)—continued.

Numbers.		R A N K .	DESCRIPTION OF PAY, &c.	TOTAL AMOUNT.	
1876-77.	1877-78.			1877-78.	1876-77.
				£. s. d.	£. s. d.
		SPECIAL PAY AND ALLOWANCES—continued.			
			Brought forward - - -	9,570 12 6	10,347 3 3
		LODGING MONEY:			
1	1	Harbour Master at Portland, borne in Her Majesty's Ship "Duke of Wellington."	Lodging Money - - - - -	50 - -	50 - -
8	8	Commanders of Drill Ships of the Royal Naval Reserve.	Ditto - - - (To each, of 80 l. a year)	640 - -	640 - -
8	8	Fleet Surgeons of ditto - -	Ditto - - - - - " 50 l. "	400 - -	400 - -
8	8	Paymasters of ditto - - -	Ditto - - - - - " ditto "	400 - -	400 - -
		VARIOUS ALLOWANCES:			
-	-	Officers employed on board Her Majesty's Ships as Interpreters.	Allowance to Officers for acting as Interpreters -	400 - -	400 - -
-	-	Gun-room Officers, in vessels in which there is no Gun-room, to meet the increased expense of messing in the Ward-room.	Difference between the Subscriptions paid by Gun-room Officers and Ward-room Officers to their respective Messes - - - - -	2,000 - -	1,800 - -
1	1	Staff Commander of Her Majesty's Yacht "Victoria and Albert."	Allowance, in addition to his Pay, for charge of the State Furniture on board the Royal Yacht }	50 - -	50 - -
1	1	Ward-room Steward of ditto - -	Allowance, in addition to his Pay, for charge and proper keeping of Government Plate - - }	10 - -	10 - -
1	1	Navigating Lieutenant of Her Majesty's Yacht "Osborne."	Allowance, in addition to his Pay, for charge of State Furniture on board the Royal Yacht }	30 - -	30 - -
1	1	Stewardess of ditto - - -	Pay at the rate of 10 l. a month for three months	30 - -	30 - -
1	1	Master of the "Grinder," borne in the Flag Ship at Portsmouth.	Allowance, in addition to his Pay, of 2 s. 6 d. a day, or 45 l. 12 s. 6 d. a year, for assisting the Harbour Master at Portsmouth in carrying out the Dockyard Ports Regulation Act - - }	45 12 6	45 12 6
1	1	Instructor in Cookery, borne in Her Majesty's Ship "Duke of Wellington."	Pay at the rate of 5 s. 6 d. a day, or 100 l. 7 s. 6 d. a year - - - - -	100 7 6	100 7 6
1	1	Writer, borne in Her Majesty's Ship "Indus."	Pay at the rate of 4 s. a day, or 73 l. a year - -	73 -	73 - -
1	1	Butcher, borne in Her Majesty's Ship "Himalaya."	Allowance, in addition to his Pay, of 6 d. a day, or 9 l. 2 s. 6 d. a year - - - - -	9 2 6	9 2 6
2	2	Petty Officers, borne in Her Majesty's Ships "Asia" and "Indus."	Allowance to each, in addition to his Pay, of 8 d. a day, or 12 l. 3 s. 4 d. a year, for instructing seamen in Diving - - - - -	24 6 8	24 6 8
1	1	Lithographer employed in the Office of the Commander in Chief at Portsmouth, borne in Her Majesty's Ship "Duke of Wellington."	Pay at the rate of 1 l. 1 s. a week - - -	54 12 -	54 12 -
1	1	Marine employed as Lithographer in the Office of the Commander in Chief in the Mediterranean, borne in Her Majesty's Ship "Hercules."	Allowance, in addition to his Pay, of 4 d. a day, or 6 l. 1 s. 8 d. a year, for acting as Lithographer - - - - -	6 1 8	6 1 8
1	1	Lithographer employed in the Office of the Commander in Chief (North America and West Indies) borne in Her Majesty's Ship "Bellerophon."	Pay at the rate of 1 s. 8 d. a day, or 30 l. 8 s. 4 d. a year - - - - -	30 8 4	30 8 4
2	1	Superintendent of Gun Fittings in the Channel Fleet.	Pay at the rate of 9 s. a day, or 164 l. 5 s. a year -	164 5 -	328 10 -
1	1	Mess Servant, borne in Her Majesty's Ship "Vigilant."	Allowance, in addition to his Pay, of 4 d. a day, or 6 l. 1 s. 8 d. a year, for taking charge of china, glass, &c., for the convenience of Government Officers, while taking passage in the ship -	6 1 8	6 1 8
1	1	Captain's and Cabin Steward of Her Majesty's Ship "Helicon."	Allowance, in addition to his Pay, of 4 d. a day, or 6 l. 1 s. 8 d. per annum, for charge of china, glass, &c. on board - - - - -	6 1 8	6 1 8
2	2	Ward-room Servants of Her Majesty's Ship "Wye."	Annual gratuity of 10 l. to be divided between them - - - - -	10 - -	10 - -
2	2	Privates R. M. L. I. acting as Ward-room Servants in Her Majesty's Ship "Enchantress" when the Lords Commissioners of the Admiralty are on board.	Allowance to each in addition to his Pay of 10 s. a month - - - - -	12 - -	12 - -
			Carried forward - - - £.	14,122 12 -	14,863 7 9

## APPENDIX, No. 2.—EXPLANATORY STATEMENT (A. 2)—continued.

Numbers.		RANK.	DESCRIPTION OF PAY, &c.	TOTAL AMOUNT.	
1876-77.	1877-78.			1877-78.	1876-77.
				£. s. d.	£. s. d.
		SPECIAL PAY AND ALLOWANCES—continued.			
			Brought forward - - -	14,122 12 -	14,863 7 9
		Various Allowances—continued.			
	1	Person entered as Cooks' Mate, borne in Her Majesty's Ship "Duke of Wellington," "Hercules," and "Minotaur."	Allowance in addition to his Pay, of 25 l. a year, for performing the duties of Baker - - -	25 - -	75 - -
-	-	Riggers, borne on the Books of Portsmouth Dockyard.	Proportion of their Pay, for the time they are employed Afloat, as additions to the Complements of the Royal Yachts - - -	5,400 - -	5,400 - -
-	-	Extra Pay to Artificers, Seamen, and Marines of the Fleet.	For Extra Work performed on board Her Majesty's Ships at Home and Abroad, and other Services, not including Extra Pay for Work performed in Her Majesty's Yards, provided for under Votes 6, 7, and 8 - - -	9,000 - -	9,000 - -
122	-	Officers and Crew of Ships employed on Arctic Expedition.	Double Pay while absent from England - - -	- - -	3,000 - -
1	1	Senior Officer of Control Department at St. Helena.	Acting as Naval Agent for that Station - - -	25 - -	25 - -
2	2	Chief Quartermasters in command of Tenders to First Reserve Ships (late Coast Guard Cruisers).	Allowance to each, in addition to his Pay, of 1 s. 1 d. a day, or 19 l. 15 s. 5 d. a year - - -	39 10 10	39 10 10
20	20	Eight Interpreters of the 2nd grade, and 12 Native Boys training as Interpreters.	Pay at various rates from 3 s. to 8 s. a day for the Interpreters, and from 6 d. to 2 s. 6 d. for the Boys on board the Vessels employed on the East Coast of Africa in the suppression of the Slave Trade - - -	900 - -	900 - -
		HER MAJESTY'S COAST GUARD SERVICE ON SHORE:			
-	-	Extra Men at Coast Guard Stations	Pay for their employment when necessary - - -	100 - -	- - -
5	5	Chief Boatmen in Charge, at Dungeness Division.	Allowance to each, in addition to his Pay, at the rate of 3 s. a week, from 1st October to 31st March, as "Beach Pay," for wear and tear of shoes - - -	19 10 -	19 10 -
43	37	Boatmen at ditto - - -	Ditto - - - ditto - - - at the rate of 2 s. a week - - -	96 4 -	111 16 -
15	15	Boatmen, &c., at Blacksod Point, Rutland, and St. Ann's Head Stations.	Allowance to each, in addition to his Pay, of 2 d. a day, or 3 l. 0 s. 10 d. a year, to cover expenses incurred in procuring coal for these stations - - -	45 12 6	45 12 6
		TOTAL Special Pay and Allowances as provided for in the body of the Estimate, page 8 - - -			
			- £.	29,773 9 4	33,479 17 1

APPENDIX, No. 3.

A RETURN showing the Number of Officers, Men, and Boys, MORE or LESS, Borne than Voted during the present Financial Year.

FOR HER MAJESTY'S FLEET (including First Reserve Ships and Tenders—late Coast Guard Afloat and Cruisers), but exclusive of Indian Troop Ships.

MONTH.	NUMBER VOTED.	NUMBER BORNE.							Number, More or Less Borne than Voted.	
		Officers and Seamen.	Boys (including those for Training).	TOTAL.	Marines (including those serving in the Indian Troop Ships).			Total of all Classes.	More.	Less.
					Afloat.	On Shore.	TOTAL.			
1876:										
April -	Seamen - - - 33,400 } Boys - - - 7,000 } (Including 3,000 Training.) } Marines { Afloat - 7,000 } { On Shore, 7,000 } TOTAL - - - 54,400	34,810	6,133	40,943	6,643	6,783	13,426	54,369	-	3
May -		34,646	6,419	41,065	6,523	6,908	13,431	54,496	96	-
June -		34,824	6,486	41,310	6,491	6,929	13,420	54,730	330	-
July -		34,843	6,384	41,227	6,416	7,039	13,455	54,682	282	-
August -		34,454	6,443	40,897	6,521	6,952	13,473	54,370	-	3
September -		34,435	6,273	40,708	6,549	6,975	13,524	54,232	-	16
October -		34,488	6,384	40,872	6,433	7,086	13,519	54,391	-	-
November -		34,484	6,360	40,844	6,511	7,066	13,577	54,421	21	-
December -		34,321	6,243	40,564	6,537	7,052	13,589	54,153	-	2
1877:										
January -		34,465	6,272	40,737	6,598	7,034	13,632	54,369	-	-

FOR HER MAJESTY'S COAST GUARD SERVICE ON SHORE.

MONTH.	NUMBER VOTED.	NUMBER BORNE.	Number, More or Less, Borne than Voted.	
	Officers and Men.	Officers and Men.	More.	Less.
1876:				
April - - - -	4,300	4,224	-	76
May - - - -		4,208	-	92
June - - - -		4,200	-	100
July - - - -		4,155	-	145
August - - - -		4,142	-	158
September - - -		4,136	-	164
October - - - -		4,125	-	175
November - - -		4,125	-	175
December - - -		4,072	-	228
1877:				
January - - - -		4,127	-	173

CADETS.—Number of NAVAL CADETS admitted into the Royal Navy in the Year ended 31st December 1876 - - 83.



## APPENDIX, No. 4.

A COMPARATIVE STATEMENT showing the Number of Ships and Vessels in Commission on 1st December 1875  
and on 1st December 1876 (exclusive of Indian Troop Ships).

R A T E S, &c.			1 December 1875.		TOTAL.	1 December 1876.		TOTAL.	1876.			
			Sailing.	Steam.		Sailing.	Steam.		More.	Less.		
SEA-GOING :												
Line of Battle Ships			{	Armour-plated	-	4	{	-	4	{	-	-
			{	Others	-	-		-	-		-	-
Frigates and Corvettes			{	Armour-plated	-	11	{	-	13	{	2	-
			{	Others	-	31		-	30		-	1
Boats and small Vessels			{	Armour-plated	-	-	{	-	-	{	-	-
			{	Others	11	65		11	65		-	-
TOTAL EFFECTIVE, for GENERAL SERVICE					11	111	122	11	112	123	2	1
											1 Net More.	
First Reserve Ships			{	Armour-plated	-	7	{	-	7	{	-	-
			{	Others	-	2		-	2		-	-
Gunners and Training Ships					8	-	{	9	-	{	1	-
Stationary, Receiving, and Depot Ships (including Royal Yachts)			{		11	8		13	6		2	2
Surveying Vessels					-	3	{	-	3	{	-	-
					-	3		-	5		2	-
Coast Guard Ships					-	3	{	-	3	{	-	-
					-	3		-	3		-	-
Mill Ships (Royal Naval Reserve)					8	-	{	8	-	{	-	-
					5	35		6	38		4	-
Tenders					-	-	{	6	38	{	4	-
Ditto (late Coast Guard Cruisers)					21	4		21	4		-	-
TOTAL FLEET (including TENDERS)					64	176	240	68	180	* 248	10	2
											NET TOTAL 8.	
											More.	

\* This number does not include the two Arctic Steam Ships "Alert" and "Discovery," which were paid off on the 5th December 1876.

## APPENDIX, No. 5.

EXPLANATORY STATEMENT (B.) of the EXPENSE of 14,000 ROYAL MARINES, as provided for in the NAVY ESTIMATES, for 1877-78, page 9.

Numbers.		RANK.	PAY OF EACH RANK.			TOTAL AMOUNT.	
1876-77.	1877-78.		Daily.	Annual.	For the Whole.	1877-78.	1876-77.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
		GENERAL STAFF:					
1	1	Deputy Adjutant General (including rate equal to Half-pay of Regimental Rank) -	2 12 5	956 12 1	956 12 1		
1	1	Assistant Adjutant General (including rate equal to Half-pay of Regimental Rank) -	1 7 4	498 16 8	498 16 8		
-	-	Colonel Aide de Camp to Her Majesty, Additional Pay - - - - -	- 10 -	182 10 -	-		
1	1	Quartermaster - - - - -	- 9 4	170 6 8	170 6 8		
1	1	Sub-Inspector of Schools (Voted under "Scientific Branch," Vote 5) - - - - -	-	-	-		
1	1	Chief Clerk, Staff Sergeant, Royal Marine L.I.	- 2 3	41 1 3	41 1 3		
1	1	Clerk, Staff Sergeant, Royal Marine Artillery	- 3 -	54 15 -	54 15 -		
1	1	Ditto - ditto - Light Infantry - - -	- 2 3	41 1 3	41 1 3		
1	1	Ditto - ditto - ditto - - - - -	- 2 2	39 10 10	39 10 10		
-	-	Messenger (Deputy Adjutant General's Office) - - - - -	-	133 8 -	138 8 -		
-	-	Housemaid - - - - -	-	40 - -	40 - -		
8	8	- - TOTAL GENERAL STAFF - -	-	-	-	1,975 11 9	2,283 16 9
		ROYAL MARINE ARTILLERY, REGIMENTAL STAFF:					
1	1	Colonel Commandant - - - - -	2 - -	730 - -	730 - -		
1	1	Colonel, Second Commandant - - - - -	1 6 3	479 1 3	479 1 3		
-	-	Colonel, Aide-de-Camp to Her Majesty, Additional Pay - - - - -	- 10 -	182 10 -	182 10 -		
3	3	Lieutenant Colonels - - - - -	- 17 11	326 19 7	980 18 9		
1	1	Paymaster - Voted under "Marine Divisions," Vote 9 - - -	-	-	-		
1	1	Barrack Master - Voted under "Marine Divisions," Vote 9 - - -	-	-	-		
1	1	Fleet Surgeon - Voted under "Marine Divisions," Vote 8 - - -	-	-	-		
2	2	Surgeons - - - - -	-	-	-		
1	1	Gunnery Instructor - - Brevet Major - - -	- 14 1	257 - 5	257 - 5		
2	2	Ditto Instructors - - Captains - - -	- 12 1	220 10 5	441 - 10		
2	2	Musketry - ditto - - Captain - - -	- 12 1	220 10 5	220 10 5		
1	1	Staff Officer - - - Brevet Major - - -	- 14 1	257 - 5	-		
1	1	Ditto - - - Captain - - -	- 12 1	220 10 5	220 10 5		
1	1	Military Instructor, Lieutenant - - -	- 7 10	142 19 2	-		
1	1	Ditto - ditto Captain - - -	- 12 1	220 10 5	220 10 5		
1	1	Adjutant, Lieutenant - - -	- 7 10	142 19 2	142 19 2		
1	1	Quartermaster - - - - -	- 11 6	209 17 6	-		
2	2	Ditto - - - - -	- 9 4	170 6 8	340 13 4		
-	-	Ditto - - - - -	- 7 10	142 9 2	142 19 2		
2	2	Sergeants Major - - - - -	- 4 6½	82 10 1½	165 - 2½		
2	1	Schoolmasters - - - - -	- 6 -	109 10 -	109 10 -		
-	1	Ditto - - - - -	- 5 6	100 7 6	100 7 6		
1	1	Ditto - - - - -	- 4 6	82 2 6	82 2 6		
1	1	Bandmaster - - - - -	- 3 -	54 15 -	54 15 -		
3	3	Quartermaster Sergeants - - - - -	- 4 ½	73 7 7½	220 2 9½		
1	1	Barrack Sergeant - - - - -	- 3 1	56 5 5	56 5 5		
1	1	Chief Clerk, Adjutant's Office (Sergeant) - - -	- 3 -	54 15 -	54 15 -		
1	1	Ditto - Paymaster's Office - ditto - - -	- 3 1	56 5 5	56 5 5		
3	3	First-class Sergeants, Instructors of Gunnery - - -	- 3 1	56 5 5	168 16 3		
1	1	Ditto - ditto - ditto - Musketry - - -	- 3 1	56 5 5	56 5 5		
1	1	First Sergeant, Instructor of Infantry - - -	- 3 1	56 5 5	56 5 5		
1	1	Drum Major - - - - -	- 3 -	54 15 -	-		
-	1	Ditto - - - - -	- 3 1	56 5 5	56 5 5		
1	1	Bugle Major - - - - -	- 3 1	56 5 5	56 5 5		
1	1	Provost Sergeant - - - - -	- 3 9	68 8 9	-		
-	1	Ditto - - - - -	- 3 1	56 5 5	56 5 5		
1	1	Hospital Sergeant (Provided for under Vote 8) - - - - -	-	-	-		
1	1	Master Tailor - - - - -	- 3 -	54 15 -	54 15 -		
1	1	Sergeant, Officers' Mess - - - - -	- 3 1	56 5 5	56 5 5		
1	1	Armourer Sergeant - - - - -	- 5 3	95 16 3	95 16 3		
44	44	TOTAL STAFF, ROYAL MARINE ARTILLERY - - -	-	-	-	5,914 18 ½	5,924 - 6½
		ROYAL MARINE LIGHT INFANTRY, REGIMENTAL STAFF:					
3	3	Colonels Commandant - - - - -	1 18 6	702 12 6	2,107 17 6		
-	-	Colonel Aide de Camp to Her Majesty - - -	- 10 -	182 10 -	182 10 -		
4	4	Colonels, Second Commandant - - - - -	1 - -	365 - -	1,460 - -		
12	12	Lieutenant Colonels - - - - -	- 17 -	310 5 -	3,723 - -		
4	4	Paymasters - Voted under "Marine Divisions," Vote 9 - - -	-	-	-		
4	4	Barrack Masters - Voted under "Marine Divisions," Vote 9 - - -	-	-	-		
27	27	- - - Carried forward - - -	-	-	7,473 7 6	7,890 9 9½	8,207 17 3½

## APPENDIX, No. 5.—EXPLANATORY STATEMENT (B.)—continued.

Numbers.		R A N K.	PAY OF EACH RANK.			TOTAL AMOUNT.	
1876-77.	1877-78.		Daily.	Annual.	For the Whole.	1877-78.	1876-77.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
		Brought forward - - -	- - -	- - -	- - -	7,890 9 9 $\frac{1}{4}$	8,207 17 3 $\frac{1}{4}$
		ROYAL MARINE LIGHT INFANTRY, REGIMENTAL STAFF—continued.					
27	27	- - - Brought forward - - -	- - -	- - -	7,473 7 6		
	1	Deputy Inspector General - - -	- - -	- - -	- - -		
3	2	Fleet Surgeons - - -	- - -	- - -	- - -		
6	6	Surgeons - - -	- - -	- - -	- - -		
1	-	Gunnery Instructor, Captain (having higher rank as Brevet Lieut. Colonel) - - -	- 13 7	247 17 11	- - -		
2	3	Gunnery Instructors (having higher rank as Brevet Majors) - - -	- 13 7	247 17 11	743 13 9		
2	1	Musketry Instructors, Captains (having higher rank as Brevet Majors) - - -	- 13 7	247 17 11	247 17 11		
2	3	Musketry Instructors, Captains - - -	- 11 7	211 7 11	634 3 9		
7	7	Adjutants (Lieutenants) - - -	- 7 6	136 17 6	958 2 6		
3	3	Quartermasters - - -	- 11 6	209 17 6	629 12 6		
4	4	Ditto - - -	- 8 6	155 2 6	620 10 -		
7	7	Serjeants Major - - -	- 3 7	65 7 11	457 15 5		
1	1	Schoolmaster - - -	- 6 6	118 12 6	118 12 6		
5	6	Schoolmasters - - -	- 6 -	109 10 -	657 - -		
2	1	Ditto - - -	- 5 6	100 7 6	100 7 6		
1	1	Ditto - - -	- 5 -	91 5 -	91 5 -		
1	1	Ditto - - -	- 4 6	82 2 6	82 2 6		
2	2	Bandmasters - - -	- 2 3	41 1 3	82 2 6		
1	1	Ditto - - -	- 2 2	39 10 10	39 10 10		
7	7	Quartermaster Serjeants - - -	- 2 11	53 4 7	372 12 1		
4	4	Barrack Serjeants - - -	- 2 3	41 1 3	164 5 -		
3	2	Chief Clerks, Adjutant's Offices, Serjeants - - -	- 2 3	41 1 3	82 2 6		
1	2	Ditto - - ditto - - ditto - - -	- 2 2	39 10 10	79 1 8		
4	4	Ditto - Paymaster's Offices, Serjeants - - -	- 2 3	41 1 3	164 5 -		
3	3	First Class Serjeant Instructors of Gunnery - - -	- 2 3	41 1 3	123 3 9		
4	4	Ditto - - ditto - - Musketry - - -	- 2 3	41 1 3	164 5 -		
3	4	First Serjeant Instructors of Infantry - - -	- 2 3	41 1 3	164 5 -		
3	3	Drum Majors - - -	- 2 3	41 1 3	123 3 9		
1	1	Ditto - - -	- 2 2	39 10 10	39 10 10		
2	2	Bugle Majors - - -	- 2 3	41 1 3	82 2 6		
1	1	Ditto - - -	- 2 2	39 10 10	39 10 10		
4	4	Provost Serjeants - - -	- 2 11	53 4 7	212 18 4		
3	3	Hospital Serjeants (provided for under Vote 8) - - -	- - -	- - -	- - -		
1	1	Master Tailor - - -	- 2 3	41 1 3	41 1 3		
3	3	Ditto - - -	- 2 2	39 10 10	118 12 6		
1	1	Serjeant, Officers' Mess - - -	- 2 3	41 1 3	41 1 3		
3	3	Ditto - - ditto - - -	- 2 2	39 10 10	118 12 6		
2	2	Armourer Serjeants - - -	- 5 3	95 16 -	191 12 -		
2	2	Ditto - ditto - - -	- 5 2	94 5 10	188 11 8		
133	133	{ TOTAL STAFF, ROYAL MARINE LIGHT INFANTRY - - - }	- - -	- - -	- - -	15,447 1 7	15,293 10 -
		COMMISSIONED OFFICERS, ROYAL MARINE ARTILLERY:					
6	5	Captains (having higher rank by Brevet) - - -	- 14 1	257 - 5	1,285 2 1		
26	27	Ditto (not having ditto - ditto) - - -	- 12 1	220 10 5	5,954 1 3		
20	15	Lieutenants - - -	- 7 10	142 19 2	2,144 7 6		
15	19	Ditto - - -	- 6 10	124 14 2	2,369 9 2		
4	-	Ditto - - -	- 5 7	101 17 11	- - -		
9	14	Ditto - - -	- 5 3	95 16 3	1,341 7 6		
80	80	{ TOTAL COMMISSIONED OFFICERS, ROYAL MARINE ARTILLERY - - - }	- - -	- - -	- - -	13,094 7 6	13,275 7 1
		COMMISSIONED OFFICERS, ROYAL MARINE LIGHT INFANTRY:					
17	18	Captains (having higher rank by Brevet) - - -	- 13	247 17 11	4,402 2 6		
79	78	Ditto (not having ditto - ditto) - - -	- 11 7	211 7 11	16,488 17 6		
103	93	Lieutenants - - -	- 7 6	136 17 6	12,729 7 6		
7	18	Ditto - - -	- 6 6	118 12 6	2,135 5 -		
34	33	Ditto - - -	- 5 3	95 16 3	3,161 16 3		
240	240	{ TOTAL COMMISSIONED OFFICERS, ROYAL MARINE LIGHT INFANTRY - - - }	- - -	- - -	- - -	38,977 8 9	39,100 12 6
		Carried forward - - - £.	- - -	- - -	- - -	75,409 7 7 $\frac{1}{4}$	75,877 6 10 $\frac{1}{4}$

## APPENDIX, No. 5.—EXPLANATORY STATEMENT (B.)—continued.

Numbers.		RANK.	PAY OF EACH RANK.			TOTAL AMOUNT.	
1876-77.	1877-78.		Daily.	Annual.	For the Whole.	1877-78.	1876-77.
		Brought forward - - -	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
		NON-COMMISSIONED OFFICERS AND GUNNERS, ROYAL MARINE ARTILLERY:				75,409 7 7½	75,877 6 10½
30	29	Colour Serjeants - - - - -	3 7	65 7 11	1,896 9 7		
2	3	Ditto - - - - -	3 6	63 17 6	191 12 6		
93	71	Serjeants - - - - -	3 1	56 5 5	3,995 4 7		
51	73	Ditto - - - - -	3 -	54 15 -	3,996 15 -		
54	42	Corporals - - - - -	2 5	44 2 1	1,852 7 6		
74	86	Ditto - - - - -	2 4	42 11 8	3,662 3 4		
36	25	Bombardiers - - - - -	2 3	41 1 3	1,026 11 3		
76	87	Ditto - - - - -	2 2	39 10 10	3,440 2 6		
6	6	Musicians - - - - -	1 6½	27 15 1½	166 10 7½		
19	19	Ditto - - - - -	1 5½	26 4 8½	498 9 - ¾		
1	-	Bugler - - - - -	1 6½	27 15 1½	-		
47	48	Ditto - - - - -	1 5½	26 4 8½	1,259 5 -		
374	286	Gunners - - - - -	1 6½	27 15 1½	7,937 19 9½		
1,914	2,002	Ditto - - - - -	1 5½	26 4 8½	52,521 4 4½		
2,777	2,777	{TOTAL NON-COMMISSIONED OFFICERS AND GUNNERS, ROYAL MARINE ARTILLERY - - - - -}	- - -	- - -	- - -	82,444 15 1½	82,650 1 4½
		NON-COMMISSIONED OFFICERS AND PRIVATES, ROYAL MARINE LIGHT INFANTRY:					
88	78	Colour Serjeants - - - - -	2 9	50 3 9	3,914 12 6		
8	18	Ditto - - - - -	2 8	48 13 4	876 - -		
317	212	Serjeants - - - - -	2 3	41 1 3	8,705 5 -		
211	316	Ditto - - - - -	2 2	39 10 10	11,495 3 4		
145	108	Corporals - - - - -	1 7	28 17 11	3,120 15 -		
431	468	Ditto - - - - -	1 6	27 7 6	12,811 10 -		
5	4	Musicians - - - - -	1 4½	25 9 5½	101 17 11		
17	12	Ditto - - - - -	1 4	24 6 8	292 - -		
53	59	Ditto - - - - -	1 3	22 16 3	1,345 18 9		
9	9	Buglers - - - - -	1 4½	25 9 5½	229 5 3½		
231	231	Ditto - - - - -	1 3	22 16 3	5,269 13 9		
1,897	1,388	Privates - - - - -	1 3	22 16 3	31,663 15 -		
7,806	7,815	Ditto - - - - -	1 2	21 5 10	165,649 3 4		
10,718	10,718	{TOTAL NON-COMMISSIONED OFFICERS AND PRIVATES, ROYAL MARINE LIGHT INFANTRY - - - - -}	- - -	- - -	- - -	245,474 19 10½	248,235 14 9½
14,000	14,000	- - - - - GRAND TOTAL - - -	- - -	- - -	- - -	403,329 2 7½	406,763 3 -
7,000	7,000	Afloat.—Commissioned Officers and Men - - - - -	- - -	- - -	179,000 - -		
7,000	7,000	Ashore {Commissioned and Staff Officers - - - - - 300 Non-commissioned Officers and Men - - - - - 6,700	- - -	- - -	53,364 - - 170,965 - -		
5,951	5,884	Good Conduct Pay {Service Afloat - - - - - Service Ashore - - - - -	- - -	- - -	5,800 - - 11,600 - -	403,329 - -	406,763 - -
		PRIZES TO ROYAL MARINES FOR GOOD SHOOTING AND FOR JUDGING DISTANCE - - - - -	- - -	- - -	- - -	17,400 - -	18,284 - -
			- - -	- - -	- - -	800 - -	810 - -
		RECRUITING EXPENSES:					
1,600	1,600	Expenses (including Levy Money) on account of 1,600 Recruits to be raised at Head Quarters and Recruiting Stations - - - - -	- - -	- - -	8,220 - -		
551	506	Gratuity to 506 Marines re-engaging after Eight Years' Service, at 11. per man, and Attestation Fee of 1 s. each - - - - -	- - -	- - -	530 - -	8,750 - -	8,600 - -
4	4	Colonial or Double Personal Pay and Field Allowances to Marines serving in Japan, &c. - - - - -	- - -	- - -	- - -	376 - -	376 - -
		MARINE CONTINGENT EXPENSES AND ALLOWANCES:					
		Allowances to Pay-Captains; to Marines acting as Divisional Clerks; Allowances in aid of Divisional Mess, Forage Money; Non-effective and Contingent Allowances to Officers of the Marine Artillery having the Command of Companies; Petty Allowances to Officers of Marines; Lodging Money, Marching Money, Billet Money; Allowances for House Rent, Travelling Expenses, &c. to the Staff of the Royal Marine Office; Deserters' Expenses, Contingent Allowances to Marines serving in Japan, &c. &c. - - - - -	- - -	- - -	- - -	20,000 - -	20,500 - -
		Add,—			£.	450,655 - -	455,333 - -
		To provide for Additional Expenses arising from re-adjustment of Staff (arrangements under consideration) - - - - -	- - -	- - -	- - -	1,000 - -	- - -
		TOTAL - - - - -	- - -	- - -	£.	451,655 - -	455,333 - -



## APPENDIX, No. 6.

A RETURN, giving the ITEMS of EXPENDITURE in the Year 1875-76 (the last Financial Year closed), on account of MARINE CONTINGENCIES and ALLOWANCES.

	£.	s.	d.
Allowances to Pay Captains - - - - -	469	13	-
Ditto to Marines acting as Divisional Clerks - - - - -	1,639	15	7
Forage Money - - - - -	1,651	2	4
Non-effective and Contingent Allowances to Officers of Artillery having the command of Companies - - - - -	440	-	-
Billet and Lodging Money, Marching Money, Conduct Money, and Family Allowances - - - - -	6,439	7	1
Allowances to Quartermasters, Adjutants, and Acting Adjutants - - -	1,138	5	6
Allowances in aid of Divisional Mess - - - - -	1,781	5	-
Contingent Allowances to Officers and Men; Allowance for House-rent to the Staff of the Royal Marine Office, and sundry Contingent Expenses - - - - -	4,927	3	7
TOTAL EXPENDITURE for the Year 1875-76 - - - £.	18,486	12	1

## APPENDIX, No. 7.

STATEMENT of the whole Charge on account of the CORPS of ROYAL MARINES, included under the several VOTES of the ESTIMATES.

	Under Vote.	£.
	No.	
For the Wages, &c. of the Marines - - - - -	1	451,655
For Victuals and Clothing of the Marines - - - - -	2	210,558
For Salaries, Contingent Expenses, and Wages of Matrons, Nurses, &c., and of the Metropolitan Police Force at the several Marine Infirmaries - - - - -	8	10,568
For Salaries and Contingent Expenses of the Establishments at the several Marine Divisions - - - - -	9	21,316
For new Works, and Repairs of Buildings at the Marine Divisions and Infirmaries - - - - -	11	19,855
For Medical Attendance, Medicines, &c. - - - - -	12	13,575
For Half-Pay of Marine Officers - - - - -	15	60,117
For Pensions, viz.: £.		
To Marine Officers for Good and Meritorious Services - - - - -		1,600
To Marines for Conspicuous Bravery - - - - -		50
To Commissioned Officers for Wounds and Injuries - - - - -		280
To Widows and Relatives of Marine Officers Slain, &c. - - - - -		250
To Widows of Marine Officers - - - - -		8,898
Pensions and Gratuities to Marines - - - - -		129,347
	16	
	(Sec. I.)	140,425
To three Schoolmistresses, Royal Marine Divisions - - - - -	68	
To Barrackmaster, Chatham - - - - -	345	
	16	
	(Sec. II.)	413
TOTAL - - - £.		928,482

## APPENDIX, No. 8.

STATEMENT of the EXPENDITURE in the Year 1875-76 (the last Financial Year closed), for REWARDS, EXPERIMENTS, &c., for SCIENTIFIC PURPOSES.

	£.	s.	d.
Gratuity towards Funds of Institution of Naval Architects - - - -	250	-	-

## APPENDIX, No. 9.

STATEMENT of the RATES of SURVEYING PAY and LODGING MONEY OF SURVEYING OFFICERS, provided for in the Estimates, 1877-78.

RANK.	Surveying Pay (Daily Rate).		Lodging Money (Daily Rate).	
	At Home.	Abroad.	At Home.	Abroad.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.
In Charge of Surveys :				
Captains - - -	- - -	1 - -	- - -	- - -
Commanders - - -	- - -	1 - -	- - -	- - -
Lieutenants - - -	- - -	- 15 -	- - -	- 6 -
Staff Commanders - - -	- 13 6	1 - -	- 4 6	- 4 6
Navigating Lieutenants - - -	- - -	- 15 -	- - -	- 6 -
Assistant Surveyors :				
Lieutenants - - -	- - -	4 s. to 8 s.	- - -	- - -
Staff Commanders - - -	- 7 -	- 8 -	- 4 6	- - -
Navigating Lieutenants - - -	- 7 -	6 s. to 8 s.	- 3 6	3 s. 6 d. to 6 s.
Sub-Lieutenants - - -	- - -	2 s. 6 d. to 4 s.	- - -	- - -
Navigating Sub-Lieutenants - - -	- - -	4 s. to 6 s.	- - -	2 s. 6 d. to 5 s.

## APPENDIX, No. 10.

Note.—SHOWING THE SURVEYS IN PROGRESS.

HOME.		FOREIGN.	
South and East Coasts of England.	China.	Victoria.	} Australia.
	Japan.	Queensland.	
West Coast of England.	West Indies.	South Australia.	
	Newfoundland.	West Australia.	
Coasts of Ireland.	East Coast of Africa.	Mauritius.	
	Fiji Islands.		

## APPENDIX, No. 11.

## PROGRAMME of SHIPBUILDING WORKS to be undertaken in HER MAJESTY'S DOCKYARDS during the Year 1877-78.

## GENERAL SUMMARY, showing the Appropriation of Men proposed for the Year 1877-78.

	Number of Men for 1877-78.	Number of Men for 1876-77.
For Ships Building, and for completing new Ships Afloat, for Sea Service - - - - -	6,171	5,691
For Repairs and Refits (including new Boilers) of Ships for Reliefs and for First Reserve - - - - -	9,829	10,309
For Casual Repairs and Maintenance of Ships in Com- mission, Gunnery and Training Ships, Tugs, Yard Craft, Hulks, and Contingencies - - - - -		
For Yard Manufactures - - - - -		
For Yard and Harbour Services - - - - -		
	16,000	16,000
For Store purposes at Deptford and Haulbowline - - - - -	109	109
TOTAL STRENGTH - - - - -	16,109	16,109

*Note.*—The tonnage given in this Programme is the weight of hull complete. A Ship's state of advancement in building is measured in the following manner:—Each man is assumed to add to the ship, for every day's work, an equal amount of tonnage, whether at the commencement or the completion; in other words, for every pound spent in labour there will be a certain fraction of tonnage added to the ship. This fraction is arrived at by dividing the weight of hull in tons by the total cost of labour in pounds.

It must be understood that the tonnage corresponding to the expenditure of a certain sum of money for labour will not necessarily have any reference to the weight of materials worked into the hull when that sum is expended.

## APPENDIX, No. 11—continued.

## ABSTRACT of the PROGRAMME of WORKS in the DOCKYARDS for 1877-78.

	CHATHAM.		SHEERNESS.		PORTSMOUTH.		DEVONPORT.		PEMBROKE.		TOTAL.	
	Number of Men to be Employed.	Tons Weight of Hull to be Built.	Number of Men to be Employed.	Tons Weight of Hull to be Built.	Number of Men to be Employed.	Tons Weight of Hull to be Built.	Number of Men to be Employed.	Tons Weight of Hull to be Built.	Number of Men to be Employed.	Tons Weight of Hull to be Built.	Number of Men to be Employed.	Tons Weight of Hull to be Built.
Armour-plated Ships . . . . .	1,145	2,758	-	-	1,293	3,662	210	520	660	1,681	3,308	8,621
Iron Covered Battery Corvettes (wood sheathed) . . . . .	268	508	-	-	237	406	-	-	-	-	505	914
Ditto . . . ditto . . Protected (wood sheathed) . . . . .	50	94	-	-	-	-	-	-	-	-	50	94
Armed Despatch Vessels . . . . .	-	-	-	-	-	-	-	-	585	1,110	585	1,110
Composite Corvettes . . . . .	223	419	40	80	-	-	70	130	-	-	333	639
Composite Sloops . . . . .	214	447	262	559	-	-	503	1,068	-	-	979	2,074
Composite Gun Vessels . . . . .	-	-	-	-	-	-	45	84	-	-	45	84
Gun Boats . . . . .	-	-	80	160	120	240	120	222	-	-	320	632
Sailing Brigs (a); Paddle Tug (b) . . . . .	-	-	-	6	-	-	-	-	(a) 40	80	43	86
Torpedo Mooring Steamers . . . . .	-	-	3	6	-	-	-	-	-	-	3	0
TOTAL BUILDING . . . . .	1,900	4,326	388	811	1,650	4,308	948	2,024	1,285	2,871	6,171	14,210
" REPAIRS AND CONTINGENCIES. . . . .	255	-	716	-	2,000	-	1,758	-	200	-	4,749	-
MANUFACTURES . . . . .	560	-	165	-	500	-	850	-	80	-	2,155	-
YARD SERVICES . . . . .	785	-	375	-	760	-	780	-	225	-	2,925	-
GRAND TOTAL OF MEN . . . . .	3,500	-	1,644	-	4,910	-	4,336	-	1,610	-	16,000	-



# CHATHAM YARD.

## BUILDING, COMPLETING FOR SEA, REPAIRING, &c.

A. Number of Slip or Dock.	B.  R A T E.	C.  Guns. I. H. P.	D.  Tons Weight of Hull.	F. Estimated Cost.				G.  NAME OF SHIP.	H. Actual Condition of Ship on 31st March 1876.	I. Amount which will probably have been performed during the Financial Year 1876-77.	J. Probable Condition of Ship on 31st March 1877.		1877-78.		REMARKS.						
				For the Hull.			Total for Labour (on which Tonnage is based).				Additional Charges for Machinery, Masts and Yards, and Riggings.	Amount Spent for Labour only.	Proportion of Ship Built, but having reference to Labour only.	Amount Spent for Labour only.		Proportion of Hull, but having reference to Labour only.	Amount Spent for Labour only.	Number of Tons Weight of Hull.	Equivalent Expenditure for Labour only.	Ship to be Advanced.	Number of Men to be Employed on the Ship.
				Materials.	Labour.	Total.															
BUILDING AND COMPLETING FOR SEA:																					
No. 7 Dock	Armour-plated Ship -	8	7,000	5,535	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	260	To complete.					
No. 7 Slip	Armour-plated Turret Ship.	4	6,000	5,901	214,800	136,400 435,000*	351,200	4,833	141,233	1,480 4,578	37,749	4,847 5,071	123,680	888	17,553	260	To advance to 2,578 tons (= 44 ths.) 100				
	Ditto - - -	-	-	-	-	-	-	-	-	664	16,307	678	16,644	1,900	46,400	800	To commence.				
	Iron Covered Battery Corvette, Protected (Wood Sheathed).	-	-	-	-	-	-	-	-	-	-	-	-	170	4,930	85	To commence.				
No. 5 Slip	Iron Covered Battery Corvette (Wood Sheathed).	16	5,250	1,906	75,000	63,000	138,000	2,224	65,224	576	19,715	1,398	47,858	508	17,366	268	To complete.				
No. 4 Slip	Composite Corvette -	12	2,100	882	30,000	29,000	59,000	1,526	30,526	257	8,881	463	16,011	419	14,515	223	To complete.				
No. 3 Slip	Composite Sloop -	6	900	642	19,000	19,000	38,000	1,000	20,000	130	4,024	195	6,035	447	13,965	214	To complete.				
TOTAL BUILDING - - -														1,900							
Repairing Ships for Reliefs :- To complete repair and refit of "Penelope," to repair and refit "Ariel," and to complete repair of "Monarch"																					
To repair Harbour Ships, Tugs, and Yard Craft (28); and Contingencies (24)																					
Manufactures - - -																					
Yard and other Services - - -																					
GRAND TOTAL - - -														3,500							

\* Original estimate.

As "Monarch" is to be completed in a few months, progress on "Agamemnon" will be retarded to some extent.



BUILDING, COMPLETING FOR SEA, REPAIRING, &c.

A.  Number of Ship or Dock.	B.  R A T E.	C.  Guns. I. H. P.	D.  Weight of Hull.	F. Estimated Cost.			G.  NAME OF SHIP.	H. Actual Condition of Ship on 31st March 1876.	I. Amount which will probably have been performed during the Financial Year 1876-77.	J. Probable Condition of Ship on 31st March 1877.	1877-78.			REMARKS.	
				For the Hull.							Ship to be Advanced.	Number of Men to be Employed on the Ship.			
				Materials.	Labour.	Total.									
BUILDING AND COMPLETING FOR SEA:															
Armour-plated Turret Ship.	4	8,000	7,300	£.	283,500	£.	161,500	£.	445,000	£.	3,500	£.	165,000	£.	47,000
					*132,000										
Ditto - - ditto -	4	8,000	7,350	£.	283,943	£.	161,721	£.	445,664	£.	3,565	£.	165,286	£.	25,486
					*132,445										
Design not yet decided - - -															
Iron Covered Battery Corvette (Wood Sheathed).	16	5,250	1,906	£.	74,407	£.	75,515	£.	149,922	£.	2,511	£.	78,026	£.	16,627
					*63,000										
Twin-screw Iron Gun Boat.	3	310	220	£.	-	£.	-	£.	-	£.	-	£.	-	£.	555
Ditto - - ditto -	3	310	220	£.	-	£.	-	£.	-	£.	-	£.	-	£.	1,225
Ditto - - ditto -	3	310	220	£.	-	£.	-	£.	-	£.	-	£.	-	£.	1,225
Ditto - - ditto -	3	310	220	£.	-	£.	-	£.	-	£.	-	£.	-	£.	1,225
Ditto - - ditto -	3	310	220	£.	-	£.	-	£.	-	£.	-	£.	-	£.	1,225
Ditto - - ditto -	3	310	220	£.	-	£.	-	£.	-	£.	-	£.	-	£.	1,545
Ditto - - ditto -	3	310	220	£.	-	£.	-	£.	-	£.	-	£.	-	£.	1,545
TOTAL BUILDING - - -														1,650	
Repairs of Ships for Reliefs:—To complete repairs of "Hercules," "Triumph," "Lord Clyde" (for Gunnership), "Inconstant," "Glasgow," "Dido," "Dwarf," and "Enchantress"														1,399	
To make good defects of Channel Squadron (50) ; Coast Guard Ships and Tenders, Gunnership, Training, and Harbour Ships, Yachts, Troop Ships (except Indian Troop Ships), Tugs, Yard Craft, and to do other casual work (451) ; and contingencies (100)														601	
Manufactures - - - - -														500	
Yard and other Services - - - - -														760	
GRAND TOTAL - - - - -														4,910	

\* Of this amount, 500 tons only were built at Portsmouth.

\* Original Estimates.





BUILDING, COMPLETING FOR SEA, REPAIRING, &c.

A.	B.	C.	D.	E.	F.				G.	H.	I.	J.			1877-78.			REMARKS.			
Number of Slip or Dock.	RATE.	Guns.	I. H. P.	Tons Weight of Hull.	ESTIMATED COST.			NAME OF SHIP.	Actual Condition of Ship on 31st March 1876.	Amount which will probably have been performed during the Financial Year 1876-77.	Probable Condition of Ship on 31st March 1877.	Ship to be Advanced.		Number of Men to be Employed on the Ship.							
					Materials.	Labour.	Total.					Additional for Labour. Direct Charges for Machinery, Masts and Yards, and Rigging.	Total for Labour (on which Tonnage is based).		Proportion of Ship Built, expressed in Tons Weight of Hull, but having refer- ence to Labour only.	Amount Spent for Labour only.	Proportion of Ship Built, expressed in Tons Weight of Hull, but having refer- ence to Labour only.		Amount Spent for Labour only.	Number of Tons Weight of Hull.	Equivalent Expenditure for Labour only.
BUILDING AND COMPLETING FOR SEA:																					
No. 4 Slip	Armour Plated Turret Ship.	4	6,000	5,901	210,000	140,000	350,000	£. 5,000	£. 145,000	£. "Ajax"	31	764	£. 400	£. 9,709	431	10,473	£. 41,320	660	To advance to 2,112 tons (= $\frac{36}{100}$ this).		
No. 2 Slip	Armed Despatch Ves- sel.	10	7,000	1,595	40,000	50,000	90,000	3,000	53,000	£. "Iris"	121	4,031	908	30,164	1,029	34,195	16,150	256	To advance to 1,516 tons (= $\frac{95}{100}$ this), and sent to Portsmouth to complete.		
No. 1 Slip	Ditto	10	7,000	1,595	40,000	50,000	90,000	3,000	53,000	£. "Mercury"	22	738	180	6,006	202	6,764	20,700	329	To advance to 825 tons (= $\frac{52}{100}$ this).		
	Sailing Brig of "Sea- flower" class.	8	454	230	6,600	6,400	13,000	-	-	£. "Tickler"	-	-	-	-	-	-	1,133	20	To put in frame.		
	Ditto	8	454	230	6,600	6,400	13,000	-	-	£. "Pincher"	-	-	-	-	-	-	1,183	20	ditto.		
Coast Defence, Iron Gun Boats of "Sourge" class																					
Not to be proceeded with at present.																					
TOTAL BUILDING																					
1,285																					
Repairs of Harbour Ships, Tenders, and Yard Craft																					
20																					
Manufactures																					
80																					
Yard, and other Services																					
225																					
GRAND TOTAL																					
1,610																					

## APPENDIX, No. 11—continued.

## ABSTRACT of SHIPS BUILDING and COMPLETING for SEA in HER MAJESTY'S DOCKYARDS, 1877-78.

Number of Vessels.	R A T E.	N A M E.	Dockyard.	Tons Weight of Hull.	Tons built by April 1877.	Tons to be built in 1877-78.	R E M A R K S.
10	IRON CLADS -	Agamemnon -	Chatham -	5,901	678	1,900	To advance to 2,578 tons ( $=\frac{44}{100}$ ths).
		New Agamemnon	Chatham -	-	nil	170	-
		Ajax -	Pembroke -	5,901	431	1,681	To advance to 2,112 tons ( $=\frac{36}{100}$ ths).
		Dreadnought -	Portsmouth -	7,350	6,217	1,193	To complete.
		Inflexible -	Portsmouth -	7,300	4,903	2,079	To advance to 6,982 tons ( $=\frac{95}{100}$ ths).
		Nelson -	Devonport -	4,500	-	250	To complete at Dockyards after delivery by contractors.
		Northampton -	Devonport -	4,500	-	250	
		Shannon -	Devonport -	3,370	3,350	20	To complete.
		Temeraire -	Chatham -	5,535	4,847	688	- ditto.
		Torpedo Ram -	Portsmouth -	-	nil	450	-
6	CORVETTES -	New Type -	Chatham -	-	nil	94	To commence.
		Bacchante -	Portsmouth -	1,906	1,500	406	To complete.
		Emerald -	Devonport -	882	752	130	- ditto.
		Euryalus -	Chatham -	1,906	1,398	508	- ditto.
		Garnet -	Chatham -	882	463	419	- ditto.
		Ruby -	Sheerness -	882	-	80	To complete at Dockyard after delivery by contractors.
6	SLOOPS -	Cormorant -	Chatham -	642	195	447	To complete.
		Dragon -	Devonport -	642	4	479	To advance to 483 tons ( $=\frac{75}{100}$ ths), and launched.
		Gannet -	Sheerness -	642	22	555	To advance to 577 tons ( $=\frac{90}{100}$ ths).
		New Gannet -	Sheerness -	642	nil	4	-
		Pegasus -	Devonport -	642	4	457	To advance to 461 tons ( $=\frac{72}{100}$ ths), and launched.
		Pelican -	Devonport -	642	510	132	To complete.
2	DESPATCH VESSELS.	Iris -	Pembroke -	1,595	1,029	487	To advance to 1,516 tons ( $=\frac{95}{100}$ ths), and sent to Portsmouth to complete.
		Mercury -	Pembroke -	1,595	202	623	To advance to 825 tons ( $=\frac{52}{100}$ ths).

## ABSTRACT of SHIPS BUILDING, &amp;c., in HER MAJESTY'S DOCKYARDS, 1877-78—continued.

Number of Vessels.	RATE.	NAME.	Dockyard.	Tons Weight of Hull.	Tons built by April 1877.	Tons to be built in 1877-78.	REMARKS.
4	COMPOSITE GUN VESSELS.	Condor - -	Devonport -	389 each	383	6	To be completed by June 1877.
		Falcon - -	Devonport -		- -	37	To complete at Dockyard after delivery by contractor.
		Flamingo - -	Devonport -		385	4	To be completed by May 1877.
		Griffon - -	Devonport -		- -	37	To complete at Dockyard after delivery by contractor.
6	COMPOSITE GUN BOATS.	Firebrand - -	Devonport -	258 each	-	222	
		Firefly - -	Devonport -				
		Firm - -	Devonport -				
		Forester - -	Devonport -				
		Forward - -	Devonport -				
		Foxhound - -	Devonport -				
11	IRON GUN BOATS	Esk - -	Sheerness -	220 each	-	400	To complete at Dockyard after delivery by contractors.
		Slaney - -	Sheerness -				
		Trent - -	Sheerness -				
		Tweed - -	Sheerness -				
		Dee - -	Portsmouth -				
		Don - -	Portsmouth -				
		Medway - -	Portsmouth -				
		Sabrina - -	Portsmouth -				
		Spey - -	Portsmouth -				
		Tay - -	Portsmouth -				
2	SAILING BRIGS -	- -	Pembroke -	230 each	nil	80	To put in frame.
		- -	- -	- -	- -	- -	- -
3	TORPEDO MOORING STEAMERS.	Nos. 1, 2, and 3	Sheerness -	37 each	- -	6	To complete at Dockyard after delivery by contractors.
1	PADDLE TUG -	Sampson - -	Sheerness -	250	- -	6	

Total - - -	10	Iron Clads - - -	- - -	8,621
	6	Corvettes - - -	- - -	1,637
	6	Sloops - - -	- - -	2,074
	2	Despatch Vessels - - -	- - -	1,110
	21	Gun Vessels and Gun Boats - - -	- - -	706
	6	Other Vessels - - -	- - -	92

GRAND TOTAL - - - 51 Vessels. 14,240 Tons to be built during 1877-78.

## APPENDIX, No. 12.

STATEMENT showing the NUMBER and DESCRIPTION of WORKMEN on the ESTABLISHMENT at the several DOCKYARDS at HOME.

Description of Workmen, &c.	Deptford.	Chatham.	Sheerness.	Portsmouth.	Devonport.	Pembroke.	TOTAL.
	No.	No.	No.	No.	No.	No.	No.
Caulkers - - - - -	-	24	27	80	60	18	209
Joiners - - - - -	-	100	70	150	140	60	520
Labourers - - - - -	22	180	80	170	169	109	730
Riggers - - - - -	-	50	60	124	130	3	367
Ropemakers, &c. - - - - -	-	29*	1	-	27†	-	57
Sailmakers - - - - -	17	14	15	30	30	1	107
Sawyers - - - - -	-	16	6	20	20	10	72
Shipwrights - - - - -	4	650	380	865	780	380	3,059
Smiths - - - - -	-	180	100	240	210	106	836
Workmen at Block, Saw, and Metal Mills - - - - -	-	74	10	32	27	13	156
Other Trades - - - - - (For description, see Statement below.)	17	161	136	323	280	50	967
Establishment - - - - -	60	1,478	885	2,034	1,873	750	7,080
AMOUNT FOR WAGES. - - -	£. 3,883	£. 113,163	£. 68,667	£. 162,586	£. 145,240	£. 56,927	£. 550,466

STATEMENT of the NUMBER of Trades, &amp;c., on the Establishment, making up the Number of "other Trades," as shown above.

	Deptford.	Chatham.	Sheerness.	Portsmouth.	Devonport.	Pembroke.	TOTAL.
	No.	No.	No.	No.	No.	No.	No.
Blockmakers - - - - -	-	1	2	-	4	-	7
Boilmakers - - - - -	-	18	30	50	50	2	150
Braziers and Tinmen - - - - -	-	3	1	5	2	1	12
Bricklayers - - - - -	-	1	1	1	1	1	5
Coopers - - - - -	-	1	1	1	1	1	5
Coppersmiths - - - - -	-	7	9	21	17	1	55
Engine-keepers - - - - -	-	7	1	-	-	-	8
Fitters - - - - -	-	34	35	130	100	20	319
Founders - - - - -	-	5	4	14	10	2	35
Hosemakers - - - - -	1	1	1	1	1	1	6
Locksmiths - - - - -	-	2	1	2	2	-	7
Masons - - - - -	-	1	1	1	1	1	5
Messengers - - - - -	-	7	6	8	9	4	34
Oarmakers - - - - -	-	-	-	-	-	-	-
Oar Machine - - - - -	-	7	-	-	-	-	7
Packing-case Maker - - - - -	1	-	-	-	-	-	1
Painters, Glaziers, &c. - - - - -	-	16	12	40	22	4	94
Pattern Makers - - - - -	-	4	4	6	6	1	21
Paviours - - - - -	-	-	-	-	-	-	-
Plumbers - - - - -	-	12	4	10	16	1	43
Single Stationed Man for testing Stores - - - - -	-	1	-	-	-	-	1
Storehousemen - - - - -	15	24	17	21	28	7	112
Stokers - - - - -	-	-	-	-	-	-	-
Surgery Attendants - - - - -	-	1	1	1	2	1	6
Tailors - - - - -	-	-	-	1	1	-	2
Timekeepers - - - - -	-	3	3	4	4	1	15
Wheelwrights - - - - -	-	5	2	6	3	1	17
TOTAL - - - - -	17	161	136	323	280	50	967

\* Including five for Spinning Machines.

† Including two for Spinning Machines.



## APPENDIX, No. 13.

STATEMENT showing the DISTRIBUTION of HIRED ARTIFICERS, LABOURERS, &amp;c. in the several DOCKYARDS at HOME (including FACTORIES).

Description of Workmen, &c.	Deptford.	Chatham.	Sheerness.	Portsmouth.	Devonport.	Pembroke.	Haul-bowline.	Port-land.	TOTAL.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Hired Artificers and Labourers (inclusive of Factory) (For description of Trades, see below.)	28	1,869	753	2,856	2,239	860	15	1	8,621
Hired Ropemakers	-	1	-	-	13	-	-	-	14
Hired Labourers for Ropery	-	6	-	-	9	-	-	-	15
Hired House Boys	-	18	-	-	20	-	-	-	38
Hired Workpeople for the Spinning Machines in the Ropery	-	123	-	-	170	-	-	-	293
Colour Women	7	5	5	20	12	-	-	-	49
Total Number	35	2,022	758	2,876	2,463	860	15	1	9,030
AMOUNT OF WAGES - £.	1,472	106,975	42,178	162,258	137,323	40,165	759	73	491,203

NUMBER and DESCRIPTION of the HIRED ARTIFICERS and LABOURERS above shown in the Aggregate as 8,621.

	Deptford.	Chatham.	Sheerness.	Portsmouth.	Devonport.	Pembroke.	Haul-bowline.	Port-land.	TOTAL.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Apprentices	-	74	75	147	140	93	-	-	529
Blockmakers	-	-	-	3	1	-	-	-	4
Blockmills	-	-	-	-	-	-	-	-	-
Boilermakers	-	8	21	75	100	-	-	-	204
Boys	1	222	50	296	174	122	-	-	865
Braziers and Tinmen	-	3	1	3	-	-	-	-	7
Bricklayers	-	3	-	1	-	-	-	-	6
Caulkers	-	5	8	3	4	-	-	-	20
Coopers	1	-	-	-	-	-	-	-	1
Coppersmiths	-	7	8	39	17	1	-	-	72
Draughtsmen and Writers	-	3	4	7	4	-	-	-	18
Engineer Students	-	32	31	60	50	-	-	-	173
Engine Keeper	-	-	-	-	-	-	-	1	1
Fitters	-	140	40	186	180	31	-	-	577
Founders	-	18	2	21	25	4	-	-	70
Joiners	-	54	15	136	120	1	-	-	326
Labourers	25	432	242	698	554	235	11	-	2,197
Ditto (skilled)	-	430	134	614	480	211	-	-	1,869
Locksmith	-	-	-	-	-	-	-	-	-
Leading-men of Stores	-	-	1	1	1	-	-	-	3
Masons	-	-	-	-	-	-	-	-	-
Messengers	-	-	2	2	2	-	-	-	6
Metal Mill Men	-	13	-	-	-	-	-	-	13
Oarmakers	-	-	-	-	-	-	-	-	-
Painters	-	8	2	28	2	-	-	-	40
Pattern Makers	-	4	4	18	16	-	-	-	42
Plumbers	-	2	-	2	3	-	-	-	7
Recorders of Work	-	-	1	2	3	-	-	-	6
Riggers	-	2	5	114	-	-	-	-	121
Sailmakers	-	2	2	9	16	-	-	-	29
Sawyers	-	-	4	4	-	-	-	-	8
Sawmill Men	-	-	1	-	-	-	-	-	1
Store Porters and Storehouse Men	-	-	2	2	2	1	1	-	8
Shipwrights	-	203	73	290	263	73	2	-	904
Smiths	1	204	24	91	78	88	1	-	487
Traction Engine	-	-	-	-	-	-	-	-	-
Wheelwrights	-	-	1	4	2	-	-	-	7
Writers	-	-	-	-	-	-	-	-	-
TOTAL for 1877-78	28	1,869	753	2,856	2,239	860	15	1	8,621

## APPENDIX,

## ABSTRACT of APPENDICES,

SHOWING the Numbers of ESTABLISHED and HIRED MEN of

	DEPTFORD.			CHATHAM.			SHEERNESS.		
	Estab- lished.	Hired.	Total.	Estab- lished.	Hired.	Total.	Estab- lished.	Hired.	Total.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Apprentices - - - -	-	-	-	-	74	74	-	75	75
Blockmakers - - - -	-	-	-	1	-	1	2	-	2
Block Mills - - - -	-	-	-	-	-	-	-	-	-
Braziers and Tinmen - -	-	-	-	3	3	6	1	1	2
Bricklayers - - - -	-	-	-	1	3	4	1	-	1
Boilermakers - - - -	-	-	-	18	8	26	30	21	51
Boys - - - -	-	1	1	-	222	222	-	30	50
" House - - - -	-	-	-	-	18	18	-	-	-
Caulkers - - - -	-	-	-	24	5	29	27	8	35
Colour Women - - - -	-	7	7	-	5	5	-	5	5
Coopers - - - -	-	1	1	1	-	1	1	-	1
Coppersmiths - - - -	-	-	-	7	7	14	9	8	17
Draughtsmen - - - -	-	-	-	-	3	3	-	4	4
Engine Keepers - - - -	-	-	-	7	-	7	1	-	1
Engineer Students - - -	-	-	-	-	32	32	-	31	31
Fitters - - - -	-	-	-	34	140	174	35	40	75
Founders - - - -	-	-	-	5	18	23	4	2	6
Hosemakers - - - -	1	-	1	1	-	1	1	-	1
Joiners - - - -	-	-	-	100	54	154	70	15	85
Labourers - - - -	22	25	47	180	432	612	80	242	322
" for Ropery - - - -	-	-	-	-	6	6	-	-	-
Leading Men of Stores - -	-	-	-	-	-	-	-	1	1
Locksmiths - - - -	-	-	-	2	-	2	1	-	1
Masons - - - -	-	-	-	1	-	1	1	-	1
Messengers - - - -	-	-	-	7	-	7	6	2	8
Metal Mills - - - -	-	-	-	41	13	54	-	-	-
Millwrights' Shop - - -	-	-	-	-	-	-	-	-	-
Oarmakers - - - -	-	-	-	-	-	-	-	-	-
Oar machine - - - -	-	-	-	7	-	7	-	-	-
Packing-case Maker - - -	1	-	1	-	-	-	-	-	-
Painters - - - -	-	-	-	16	8	24	12	2	14
Paviours - - - -	-	-	-	-	-	-	-	-	-
Pattern Makers - - - -	-	-	-	4	4	8	4	4	8
Plumbers - - - -	-	-	-	12	2	14	4	-	4
Recorders of Work - - -	-	-	-	-	-	-	-	1	1
Riggers - - - -	-	-	-	50	2	52	60	5	65
Ropemakers - - - -	-	-	-	24	1	25	1	-	1
Sailmakers - - - -	17	-	17	14	2	16	15	2	17
Saw-mill Men - - - -	-	-	-	33	-	33	10	1	11
Sawyers - - - -	-	-	-	16	-	16	6	4	10
Shipwrights - - - -	4	-	4	650	203	853	380	73	453
Single-stationed Man - -	-	-	-	1	-	1	-	-	-
Skilled Labourers - - -	-	-	-	-	430	430	-	134	134
Smiths - - - -	-	1	1	180	204	384	100	24	124
Spinning Machinery - - -	-	-	-	5	123	128	-	-	-
Stokers - - - -	-	-	-	-	-	-	-	-	-
Storehouse - men and Store	-	-	-	-	-	-	-	-	-
Porters - - - -	15	-	15	24	-	24	17	2	19
Surgery Attendant - - -	-	-	-	1	-	1	1	-	1
Tailors - - - -	-	-	-	-	-	-	-	-	-
Timekeepers - - - -	-	-	-	3	-	3	3	-	3
Traction Engine - - - -	-	-	-	-	-	-	-	-	-
Wheelwrights - - - -	-	-	-	5	-	5	2	1	3
Writer - - - -	-	-	-	-	-	-	-	-	-
<b>TOTAL - - -</b>	<b>60</b>	<b>35</b>	<b>95</b>	<b>1,478</b>	<b>2,022</b>	<b>3,500</b>	<b>885</b>	<b>758</b>	<b>1,643</b>

No. 14.

Nos. 12 and 13.

the several TRADES provided for in the Estimates, 1877-78.

PORTSMOUTH.			DEVONPORT.			PEMBROKE.			HAUL-BOWLINE.	PORTLAND.	TOTAL.		
Estab-lished.	Hired.	Total.	Estab-lished.	Hired.	Total.	Estab-lished.	Hired.	Total.	Hired.	Hired.	Estab-lished.	Hired.	Total.
No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
-	147	147	-	140	140	-	93	93	-	-	-	529	529
-	3	3	4	1	5	-	-	-	-	-	7	4	11
17	-	17	-	-	-	-	-	-	-	-	17	-	17
5	3	8	2	-	2	1	-	1	-	-	12	7	19
1	1	2	1	2	3	1	-	1	-	-	5	6	11
50	75	125	50	100	150	2	-	2	-	-	150	204	354
-	296	296	-	174	174	-	122	122	-	-	-	865	865
-	-	-	-	20	20	-	-	-	-	-	-	38	38
80	3	83	60	4	64	18	-	18	-	-	209	20	229
-	20	20	-	12	12	-	-	-	-	-	-	49	49
1	-	1	1	-	1	1	-	1	-	-	5	1	6
21	39	60	17	17	34	1	1	2	-	-	55	72	127
-	7	7	-	4	4	-	-	-	-	-	-	18	18
-	-	-	-	-	-	-	-	-	-	1	8	1	9
-	60	60	-	50	50	-	-	-	-	-	-	173	173
130	186	316	100	180	280	20	31	51	-	-	319	577	896
14	21	35	10	25	35	2	4	6	-	-	35	70	105
1	-	1	1	-	1	1	-	1	-	-	6	-	6
150	136	286	140	120	260	60	1	61	-	-	520	326	846
170	698	868	169	554	723	109	235	344	11	-	730	2,197	2,927
-	-	-	-	9	9	-	-	-	-	-	-	15	15
-	1	1	-	1	1	-	-	-	-	-	-	3	3
2	-	2	2	-	2	-	-	-	-	-	7	-	7
1	-	1	1	-	1	1	-	1	-	-	5	-	5
8	2	10	9	2	11	4	-	4	-	-	34	6	40
-	-	-	-	-	-	-	-	-	-	-	41	13	54
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	7	-	7
-	-	-	-	-	-	-	-	-	-	-	1	-	1
40	28	68	22	2	24	4	-	4	-	-	94	40	134
-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	18	24	6	16	22	1	-	1	-	-	21	42	63
10	2	12	16	3	19	1	-	1	-	-	43	7	50
-	2	2	-	3	3	-	-	-	-	-	-	6	6
124	114	238	130	-	130	3	-	3	-	-	367	121	488
-	-	-	25	13	38	-	-	-	-	-	50	14	64
30	9	39	30	16	46	1	-	1	-	-	107	29	136
15	-	15	27	-	27	13	-	13	-	-	98	1	99
20	4	24	20	-	20	10	-	10	-	-	72	8	80
865	290	1,155	780	263	1,043	380	73	453	2	-	3,059	904	3,963
-	-	-	-	-	-	-	-	-	-	-	1	-	1
-	614	614	-	480	480	-	211	211	-	-	-	1,869	1,869
240	91	331	210	78	288	106	88	194	1	-	836	487	1,323
-	-	-	2	170	172	-	-	-	-	-	7	293	300
-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	2	23	28	2	30	7	1	8	1	-	112	8	120
1	-	1	2	-	2	1	-	1	-	-	6	-	6
1	-	1	1	-	1	-	-	-	-	-	2	-	2
4	-	4	4	-	4	1	-	1	-	-	15	-	15
-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	4	10	3	2	5	1	-	1	-	-	17	7	24
-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,034	2,876	4,910	1,873	2,463	4,336	750	860	1,610	15	1	7,080	9,030	16,110

## APPENDIX, No. 15 (A.)

STATEMENT showing the NUMBER and DESCRIPTION of WORKMEN authorised on the ESTABLISHMENT at the several VICTUALLING YARDS at HOME for the Year 1877-78.

RATING.	Royal Victoria.	Royal Clarence.	Royal William.	Haulbowline.	TOTAL.
	No.	No.	No.	No.	No.
Coopers and Apprentices - - - -	43	15	13	2	73
Sawyers - - - - -	2	-	-	-	2
Blacksmiths - - - - -	7	3	3	-	13
Millers and Millers' Boys - - - -	5	3	2	-	10
Bakers and Bakers' Boys - - - -	12	9	8	-	29
Other Trades - - - - -	41	15	13	2	71
Leading Men of Stores, 1st Class - -	3	2	2	1	8
Ditto - ditto - 2nd Class - - -	7	5	4	-	16
Storehousemen, 1st Class - - - -	2	-	-	-	2
Ditto - 2nd Class - - - - -	10	7	5	-	22
Leading Men of Labourers - - - -	7	2	2	-	11
Labourers - - - - -	59	16	19	8	102
TOTAL - - - - -	198	77	71	13	359

## APPENDIX, No. 15 (B.)

STATEMENT of the NUMBERS of HIRED MEN provided for in 1877-78 at the several VICTUALLING YARDS at HOME and ABROAD.

Y A R D.	NUMBER.
Royal Victoria - - - - -	192
Royal Clarence - - - - -	39
Royal William - - - - -	36
Haulbowline - - - - -	4
Malta - - - - -	52
Halifax - - - - -	1
Bermuda - - - - -	8
Jamaica - - - - -	2
Sierra Leone - - - - -	1
Cape of Good Hope - - - - -	2
Trincomalie - - - - -	7
Hong Kong - - - - -	22
Esquimalt - - - - -	2
Yokohama - - - - -	6
	374



STATEMENT showing the Numbers and Descriptions of Established and Hired Ratings of the several Subordinate Situations on the Wages Lists of the NAVAL HOSPITALS and MARINE INFIRMARIES at HOME and ABROAD.

RATINGS.	HASLAR.			PLYMOUTH.			YARMOUTH.			HAULBOWLINE.			PORTLAND.			DARTMOUTH.			FOREIGN HOSPITALS.			MARINE INFIRMARIES.†			TOTAL.		
	*Established.	Hired.	Total.	*Established.	Hired.	Total.	*Established.	Hired.	Total.	*Established.	Hired.	Total.	*Established.	Hired.	Total.	*Established.	Hired.	Total.	*Established.	Hired.	Total.	*Established.	Hired.	Total.			
Matron - - - - -	1	-	1	1	-	1	1	-	1	1	-	1	1	-	1	1	-	1	3	1	1	9	-	-	9		
Steward - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	1		
Butler - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	1		
Under Steward - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	1		
Porter or Messenger -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	1		
Gardener - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	3	13	-	-	6		
Cook - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	4	10	4	-	-	19		
Assistant Cook - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	3		
Male Attendant on Lunatics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23		
Female - ditto - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29		
Wardmaster - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	4	-	-	3		
Infirmary Serjeant -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	4	-	-	4		
Orderly Corporal -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	5	5	-	-	5		
Dispensary-Man - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	-	-	3		
Hospital Peon, Native	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	1		
Barber - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	1		
Plumber and Overseer of Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	1		
Foreman of Washing Machinery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	1		
Engine Driver - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	1		
Assistant Engine Driver	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	1		
Foreman of Labourers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	1		
Foreman of Stores -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	1		
Postman - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	1		
Carpenter - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	1		
Boatman - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	1		
Labourer - - - - -	21	2	33	7	8	15	3	-	-	-	-	-	-	-	-	-	-	-	5	2	2	7	-	-	7		
Wachman, Native - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	43	46	-	-	89		
Nurse (Male and Female)	20	35	55	14	36	50	1	4	5	-	-	-	-	-	-	-	-	-	9	9	176	126	-	-	9		
Tailor - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	22	29	50	-	-	176		
Sempstress - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	1		
Laundress - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	1		
Washer and Mangler -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	1		
Scrubber - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	15	7	47	-	-	47		
Servant to Medical Mess	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8		
Native Servant - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6		
TOTAL - - - - -	58	66	124	31	72	103	7	6	13	-	1	1	-	2	2	48	89	137	28	37	65	204	284	-	488		

\* Some of these Situations are Supernumerary, and will be transferred to Hired List as vacancies occur.  
† Under this Head are included certain Ratings held by Men borne on the strength of their Divisions.  
‡ Including Labourers (Boats' Crews).

## APPENDIX, No. 17 (A.)

STATEMENT showing the Distribution of the Amounts proposed to be Voted for the several Services of  
Vote 10, Sect. 1, in 1877-78.

*N.B.*—The amounts are net, *i.e.*, produced by the deduction from the Gross Amount required of the Credits expected to be realised for the Supplies of Materials, &c., to other Departments of the Admiralty, and for Extra Receipts on account of Supplies to other Departments of Government, private individuals, &c.

SUB-HEADS.	Deptford Store Yard.	Chatham.	Sheerness.	Portsmouth.	Devonport.	Pembroke.	Haulbowline.	Naval Yards Abroad.	Other than Naval Yards both at Home and Abroad.	TOTAL.
	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.
A.—Timber, Masts, Deals, &c. - - -	5,000	20,000	13,000	52,000	36,000	12,300	400	A	A	138,700
B.—Metals and Metal Articles, including Iron Armour Plates, Iron Beams, and Iron Masts - - - - -	24,000	126,000	32,000	134,000	90,000	57,400	600	A	A	464,000
C.—Coals and other Fuel, &c. - - - -	52,000	20,000	4,500	14,500	11,500	6,000	500	A	A	109,000
D.—Hemp, Canvas, &c. - - - - -	26,000	42,000	7,000	16,000	57,000	400	600	A	A	149,000
E.—Paint, Materials, &c. - - - - -	42,000	17,000	17,500	56,000	39,600	3,500	1,000	A	A	176,600
F.—Purchases by Officers of Ships, Foreign Yards, and Coast Guard, and for Freight, &c., of Naval Stores - - -	9,000	100	150	300	300	100	50	45,000	115,000	170,000
TOTAL - - - £.	158,000	225,100	74,150	272,800	234,400	79,700	3,150	45,000	115,000	1,207,300

A.—Included under Deptford Store Yard.

## APPENDIX, No. 17 (B.)

STATEMENT showing the Distribution among the several Dockyards of the Amounts provided in the  
Estimates for 1877-78, under Vote 10, Sect. 2.

SUB-HEADS.	Chatham.	Sheerness.	Portsmouth.	Devonport.	Pembroke.	Other than Her Majesty's Yards.	TOTAL.
	£.	£.	£.	£.	£.	£.	£.
A.—Steam Machinery for Her Majesty's Ships and Vessels - - - - -	80,590 60,590	31,000 16,000	68,000 37,000	34,000 26,000	117,430	156,213 173,435 302,517	487,233 430,455 302,517
B.—Ships, &c. Building by Contract - - -	-	-	-	-	-	394,295	394,295
C.—Steam Boats to be Ordered - - - -	-	-	-	-	-	7,100	7,100
D.—Experimental Purposes, &c. - - - -	500	500	1,000	500	-	12,550	15,050
E.—Repairs of Ships at other than Her Ma- jesty's Dockyards - - - - -	-	-	-	-	-	65,000 30,000	65,000 30,000
F.—Salaries, Pay, Subsistence, and Travel- ling Expenses of Dockyard Officers, Work- men, and others, superintending Ships Building by Contract and other Works - -	-	-	-	-	-	14,000	14,000
G.—Hydraulic and Steam Machinery, &c., &c., and Torpedo Machinery - - - -}	10,300	-	44,500	-	10,300	-	65,100
H.—Breaking up Ships - - - - -	4,000	500	750	750	-	-	6,000
I.—Purchase of Torpedoes - - - - -	-	-	-	-	-	80,000	80,000
TOTAL - - - £.	95,390 75,390	32,000 17,000	114,250 83,250	35,250 27,250	127,730	637,380 711,380	1,042,000

## APPENDIX, No. 17 (C.)

STATEMENT of STEAM MACHINERY WORKS to be executed by Contract in 1877-78. (Provided for in Vote 10, Section 2, Item A.)

Rate and Number of Vessels.	NAME.	Indicated Horse Power.	Where Ships are Built or Building.	Work to be done.
Iron Clads - - -	Dreadnought - -	8,000	Pembroke - -	To complete.
	Nelson - - -	6,000	Glasgow - -	
	Northampton - -	6,000	- ditto - -	
	Temeraire - - -	7,000	Chatham - -	
	Inflexible - - -	8,000	Portsmouth - -	To advance to about $\frac{3}{4}$ .
	Agamemnon - - -	6,000	Chatham - -	
	Ajax - - -	6,000	Pembroke - -	
Iron Corvettes, Wood-sheathed, Cased Battery.	Iron Clad Ram - -	{ Not yet decided. }	Portsmouth - -	To commence and advance to about $\frac{3}{4}$ .
	Euryalus - - -	5,250	Chatham - -	
	Bacchante - - -	5,250	Portsmouth - -	
Corvettes, Composite -	Ruby - - -	2,100	Hull - - -	To complete.
	Garnet - - -	2,100	Chatham - -	
Corvettes, Steel and Iron, Wood-sheathed.	Comus - - -	2,300	Glasgow - -	To advance to about $\frac{3}{4}$ .
	Champion - - -	2,300	- ditto - -	
	Carysfort - - -	2,300	- ditto - -	
	Cleopatra - - -	2,300	- ditto - -	
	Curagoa - - -	2,300	- ditto - -	
	Conquest - - -	2,300	- ditto - -	
Despatch Vessels, Armed	Iris - - -	7,000	Pembroke - -	To complete.
	Mercury - - -	7,000	- ditto - -	To advance to nearly $\frac{1}{2}$ .
Sloops, Composite -	Cormorant - - -	900	Chatham - -	To complete.
	Pelican - - -	900	Devonport - -	
	Gannet - - -	900	Sheerness - -	
	Dragon - - -	900	Devonport - -	To commence and complete.
	Pegasus - - -	900	- ditto - -	
	New, of "Wild Swan" Class.	900	By Contract	To commence and advance to $\frac{1}{2}$ .
Gun Vessels, Composite -	Griffon - - -	750	Birkenhead - -	To complete.
	Falcon - - -	750	- ditto - -	
	New, of "Kestrel" Class.	750	Contract - -	To commence and advance to $\frac{1}{2}$ .
	- ditto - - -	about.	- ditto - -	
	- ditto - - -	about.	- ditto - -	
Gun Boats, Composite -	Firebrand - - -	360	Glasgow - -	To complete.
	Firefly - - -	360	- ditto - -	
	Firm - - -	360	Hull - - -	
	Forester - - -	360	- ditto - -	
	New, of "Mallard" Class.	360	Contract - -	To commence and advance to about $\frac{3}{4}$ .
	- ditto - - -	360	- ditto - -	
Gun Boats, Iron, River Service.	- ditto - - -	360	- ditto - -	To complete.
	Dee - - -	310	Jarrow - - -	
	Don - - -	310	- ditto - -	
	Esk - - -	310	- ditto - -	
	Slaney - - -	310	- ditto - -	
	Trent - - -	310	- ditto - -	
	Tweed - - -	310	- ditto - -	
Tug - - -	Sampson - - -	860	Birkenhead - -	
Torpedo Vessels -	Mooring Steamer, No. 4	110	Contract - -	To commence and complete.
	- ditto - No. 5	110	- ditto - -	
	- ditto - No. 6	110	- ditto - -	
	Fast Vessel - No. 1	175	- ditto - -	
	- ditto - No. 2	175	- ditto - -	

Boilers.—Set for "Penelope."

Repair Engines of "Hercules," "Triumph," "Invincible," "Monarch," and "Lively," by Contract.

Provide Machinery for Steamboats, &amp;c.

Total Indicated Horse Power to be constructed in 1877-78:—

Iron Clad - - - - - 7,813

17,297

Unarmoured - - - - - 18,957

25,110

TOTAL - - - 26,770

## APPENDIX, No. 17 (D.)

STATEMENT of SHIPBUILDING WORK to be executed by Contract in 1877-78.  
(Provided for in Vote 10, Section 2, Item B.)

Rate and No. of Vessels.	NAME.	Where Built or Building.	Work to be done so far as Contract is concerned.
Iron Clads - - -	Nelson - -	Glasgow - -	To complete.
	Northampton - -	- ditto - -	
Corvettes, Steel and Iron, Wood-sheathed.	Comus - -	- ditto - -	To advance to $\frac{70}{100}$ .
	Champion - -	- ditto - -	
	Cleopatra - -	- ditto - -	
	Carysfort - -	- ditto - -	To advance to $\frac{63}{100}$ .
	Curagoa - -	- ditto - -	
	Conquest - -	- ditto - -	
Sloops, Composite -	New, of "Wild Swan" Class.	Contract -	To commence and advance to $\frac{50}{100}$ .
Gun Vessels, Composite	Griffon - -	Birkenhead -	To complete.
	Falcon - -	- ditto - -	
	New, of "Kestrel" Class (improved).	Contract -	To commence and advance to $\frac{50}{100}$ .
	- ditto - -	- ditto - -	
Gun Boats, Composite	Firebrand - -	Glasgow - -	To complete.
	Firefly - -	- ditto - -	
	Firm - -	Hull - -	
	Forester - -	- ditto - -	To commence and advance to $\frac{75}{100}$ .
	New, of "Mal-lard" Class.	Contract -	
	- ditto - -	- ditto - -	
Gun Boats, Iron, River Service.	- ditto - -	- ditto - -	To complete.
	Dee - -	Jarrow - -	
	Don - -	- ditto - -	
	Esk - -	- ditto - -	
	Slaney - -	- ditto - -	
	Trent - -	- ditto - -	
Tug - - -	Tweed - -	- ditto - -	To complete.
	Sampson - -	Birkenhead -	
Torpedo Vessels -	Mooring Steamer, No. 4	Contract -	To commence and complete.
	- ditto - No. 5		
	- ditto - No. 6		
	Lighter No. 5		
	- ditto - No. 6		
	- ditto - No. 7		
	- ditto - No. 8		
	- ditto - No. 9		
	- ditto - No. 10		
	- ditto - No. 11		
	- ditto - No. 12		
	- ditto - No. 13		
	- ditto - No. 14		
	- ditto - No. 15		
	- ditto - No. 16		
	Fast Vessel, No. 1	- - -	To commence and complete.
	- ditto - No. 2	- - -	

ABSTRACT showing TONNAGE (Weight of Hull) intended to be Built by Contract in 1877-78. (Vote 10, Section 2, Item B.)

		Tons.
Iron Clads - - -	2 in No. -	961
Corvettes (Steel and Iron, Wood-sheathed)	11 " -	2,960
Sloops, Composite - - -	4 " -	296
	2	28
Gun Vessels, Composite - - -	4 " -	306
	4	164
Gun Boats, Composite - - -	7 " -	698
Gun Boats, Iron, River Service - - -	6 " -	159
Torpedo Mooring Steamers - - -	3 " -	111
Torpedo Lighters - - -	12 " -	744
Fast Torpedo Vessels - - -	2 " -	12
Tug - - -	1 " -	13
TOTAL - - -		4,408
		6,248



1877-78.

## APPENDIX, No. 18.

DETAILED STATEMENT of the Sums required for Works under £. 500 each, taken under  
Vote 11.—“NEW WORKS, BUILDINGS, MACHINERY, and REPAIRS.”

ESTABLISHMENT.	DESCRIPTION OF WORK.	AMOUNT.	PAGE.
Chatham Yard	Additional bollards to docks - - - -	400	110
	Repairs to anchor wharf river wall - - -	480	
	Partial reconstruction of timber sheds - - -	450	
	Ring bolts for docks - - - -	50	
	Gas fittings for smithery and foremen's offices -	90	
	Store-bins for coal, coke, and loam - - -	300	
	Chimneys for forges in new yard smithery -	320	
	Wood paving shed between Nos. 2 and 3 docks	200	
	Store for workmen's dresses - - - -	250	
	TOTAL - - - £.	2,540	
Sheerness Yard	Traveller frame in foundry yard - - - -	150	110
	Traveller girders for iron ship building shed -	120	
	Porticoes at pay office - - - -	150	
	Substituting wood blocks for pig iron paving at boat store - - - -	200	
	Renewing erecting pit in fitting shop - - -	60	
	Pointing sea and boundary walls - - - -	200	
	Dredging mud from basins and camber - - -	300	
	TOTAL - - - £.	1,180	
Portsmouth Yard	Railway to crane at watering island - - -	170	111
	Gas fittings in plumbers' shop - - - -	120	
	House and racks for capstan bars - - - -	350	
	Small smithery between docks Nos. 13 and 14	200	
	Washing shed for workmen - - - -	150	
	TOTAL - - - £.	990	
Devonport Yard	Dredging entrance to dock No. 2 - - - -	200	111
	Roofing over cast iron stores - - - -	400	
	New office for master ropemaker - - - -	70	
	Platforms for rope in storehouse No. 3 - - -	270	
	Enlarging paint store - - - -	170	
	TOTAL - - - £.	1,110	
Keyham Yard	Fitting coal store, Moon Cove, as a paint store	200	112
Pembroke Yard	Extension of railway to iron store - - - -	360	112
	Re-construction of shed over scales for receipt of stores - - - -	90	
	Renewal of wood block paving in working spaces between building slips - - - -	150	
	TOTAL - - - £.	600	

Appendix, No. 18.—DETAILED STATEMENT of the Sums required for Works, &c.—*continued.*

ESTABLISHMENT.	DESCRIPTION OF WORK.	AMOUNT.	PAGE.
		£.	
Portland Breakwater	Protecting and improving the harbour - -	100	113
Royal William Yard	Dredging in basin - - - - -	100	114
	Ventilating water closets in offices - -	90	
	TOTAL - - - £.	190	
Chatham Hospital -	Coal cellars for hospital serjeant and dispensary man - - - - -	50	114
Haslar Hospital -	Turkish bath - - - - -	450	114
	Cottages, late old washhouse, to complete -	450	
	TOTAL - - - £.	900	
Plymouth Hospital	Enlarging burial-ground - - - - -	270	114
Yarmouth Hospital	Enclosing ground outside hospital - - -	420	114
Chatham Barracks	Improving gun shed guard room - - -	100	115
	Extension of canteen bar - - - - -	150	
	TOTAL - - - £.	250	
Forton Barracks -	Recreation room, to complete - - - -	350	115
Eastney Barracks -	Mortuary - - - - -	100	115
Plymouth Barracks	Rebuilding wall in rear of divisional stables -	*110	115
	Apparatus for warming tailors' shop - -	60	
	Racks for made-up clothing store - - -	210	
	Archway to rear of main building - - -	200	
	Renewing staircases, men's barracks - -	310	
	TOTAL - - - £.	890	
Walmer Barracks -	Shoemaker's shops and marker's shops - -	70	116
	Enlarging dead-house at hospital - - -	70	
	Repaving coal yard - - - - -	70	
	Crane for Quartermaster's stores - - -	100	
	Store for Barrack Master's department - -	450	
	Weigh bridge - - - - -	300	
	Water closets for No. 2 house, Hospital Barracks - - -	80	
	Rebuilding straw barn - - - - -	350	
	TOTAL - - - £.	1,490	
Greenwich College	Baths for officers - - - - -	130	116
	Gas fittings - - - - -	210	
	TOTAL - - - £.	340	

■ Re-vote.

Appendix, No. 18.—DETAILED STATEMENT of Sums required for Works, &c.—*c ntinued.*

ESTABLISHMENT.	DESCRIPTION OF WORK.	AMOUNT.	PAGE.
		£.	
Gibraltar Yard	Extension of water mains - - - - -	350	116
	Roof over sawing shed - - - - -	120	
	Shop for coppersmiths - - - - -	300	
	Landing steps - - - - -	150	
	TOTAL - - - £.	920	
Malta Yard	Baths for officers at Bighi - - - - -	100	117
Bermuda Yard	New machine shop, pipes for rain water - - -	50	117
	Additional bollards to basin - - - - -	230	
	Coal store, factory quadrangle - - - - -	200	
	Latrines on breakwater - - - - -	130	
	Skittle alleys - - - - -	150	
	Billiard-room for seamen and marines - - -	180	
	TOTAL - - - £.	940	
Halifax Yard	Additional rooms for men servants, Admiralty House - - - - -	250	117
	Extension of officers' and seamen's barracks - -	120	
	New kitchen, boatswain's house - - - - -	150	
	TOTAL - - - £.	520	
Hong Kong and Kowloon.	New store, master attendant's and police quarters (additional works) - - - - -	300	119
	Houses for fire-engines - - - - -	200	
	TOTAL - - - £.	500	
Malta Victualling Yard.	Re-constructing latrine at bakery - - - - -	140	119
Halifax Victualling Yard.	House for cooper and writer - - - - -	350	119
Malta Hospital	Patent lift at hospital - - - - -	100	120
Bermuda Hospital	Staircase to zymotic ward - - - - -	90	120
	Kitchen for butler's quarters - - - - -	50	
	Alterations to surgeon's quarters - - - - -	220	
	TOTAL - - - £.	360	
Hong Kong Hospital	Jalousies for verandah at hospital and surgeon's quarters - - - - -	420	120
	Kitchen for surgeon's quarters - - - - -	220	
	Lightning conductors - - - - -	110	
	Circulating boiler and pipes for baths - - -	150	
	Raising boundary walls, and renewing gate - -	150	
	Renewal of floor - - - - -	120	
	Fence for inclosing new ground - - - - -	150	
	TOTAL - - - £.	1,320	

APPENDIX, No. 19.

DETAILED STATEMENT of the SUMS required for REPAIRS and MAINTENANCE of BUILDINGS, &c.  
taken under Vote 11, "New Works, Buildings, Machinery, and Repairs."

	Class 1.	Class 2.	Class 3.		Class 4.	Class 5.	Class 6.	Class 7.	Class 8.	Class 9.	Class 10.	TOTAL	Page of Estimate.
	Dwellings.	Offices.	Workshops.		Storehouses.	Docks.	Slips.	Wharf Walls, Boundary Walls, &c.	Paving, Drains, &c.	Miscellaneous.	Gas Fittings.		
	£.	£.	Buildings.	Furnaces, &c.	£.	£.	£.	£.	£.	£.	£.	£.	
HOME.													
Naval Yards:													
Chatham - - -	370	450	2,020	840	890	220	490	260	490	160	310	6,500	110
Sheerness - - -	1,090	50	400	100	610	80	100	170	220	90	90	3,000	110
Portsmouth - - -	650	640	2,750	400	1,650	490	370	500	610	440	500	9,000	111
Devonport - - -	420	810	690	380	280	300	500	250	500	280	90	4,500	111
Keyham - - -	50	100	1,310	600	440	350	-	100	510	420	120	4,000	112
Pembroke - - -	250	150	600	850	520	100	900	270	700	360	180	4,880	112
Outports:													
Haulbowline - - -	300	100	20	-	310	-	-	50	50	20	-	850	112
Plymouth Breakwater - - -	-	-	-	-	-	-	-	2,430	-	-	-	2,430	113
Portland ditto - - -	-	70	-	-	70	560	30	1,070	-	-	-	1,800	113
Alderney ditto - - -	-	-	-	-	-	-	-	5,000	-	-	-	5,000	113
Lewes Naval Prison - - -	40	70	10	-	-	-	-	10	10	10	-	150	113
Mylor - - -	10	-	-	-	20	-	-	80	-	50	-	160	113
Victualling Yards:													
Royal Victoria - - -	300	100	400	100	420	40	-	340	40	40	20	1,800	113
Royal Clarence - - -	20	70	410	60	770	-	-	150	150	150	20	1,800	113
Royal William - - -	140	10	130	70	250	-	-	10	60	70	10	750	114
Medical Establishments:													
Chatham - - -	40	520	-	-	20	-	-	30	110	20	10	750	114
Haslar - - -	630	1,170	110	-	70	-	-	480	330	160	50	3,000	114
Plymouth - - -	270	780	10	-	30	-	-	20	100	80	10	1,300	114
Yarmouth - - -	70	800	10	-	50	-	-	50	50	10	10	1,000	114
Portland - - -	-	50	-	-	-	-	-	-	-	-	-	50	114
Mylor - - -	-	10	-	-	-	-	-	-	-	-	-	10	115
Marine Divisions:													
Chatham - - -	820	360	-	-	80	-	-	40	80	110	10	1,500	115
Forton - - -	1,020	530	20	-	20	-	-	70	170	120	150	2,100	115
Eastney - - -	600	660	150	-	80	-	-	50	240	140	80	2,000	115
Plymouth - - -	760	210	60	-	80	-	-	60	70	110	50	1,400	115
Fort Stamford - - -	30	-	-	-	-	-	-	-	-	-	-	30	115
Walmer - - -	1,250	400	-	-	60	-	-	80	100	90	20	2,000	116
Coast Guard - - -	9,100	-	-	-	-	-	-	-	-	900	-	10,000	116
Admiralty Offices - - -	500	7,200	-	-	-	-	-	-	-	80	220	8,000	116
Greenwich College - - -	600	2,200	100	-	-	-	-	50	430	40	80	3,500	116
FOREIGN.													
Naval Yards:													
Gibraltar - - -	170	10	90	-	50	-	-	30	20	10	20	400	116
Malta - - -	350	120	170	30	510	80	-	100	100	100	40	1,600	117
Bermuda - - -	770	100	20	-	70	2,500	-	120	80	90	10	3,760	117
Halifax - - -	570	100	50	-	380	-	20	540	290	230	20	2,200	117
Jamaica - - -	220	40	110	-	230	-	30	240	60	50	10	990	118
Antigua - - -	60	20	20	-	80	-	-	60	-	-	-	240	118
Ascension - - -	60	40	50	-	70	-	-	50	20	10	-	300	118
Esquimalt - - -	190	10	70	-	120	-	-	360	130	30	20	930	118
Cape of Good Hope - - -	800	50	100	-	340	-	50	100	50	10	-	1,500	118
Trincomalee - - -	430	60	20	-	170	-	-	100	10	10	-	800	119
Hong Kong and Kowloon - - -	40	50	300	-	250	-	-	50	100	10	-	800	119
Shanghai - - -	20	40	50	-	100	-	-	300	50	40	-	600	119
Victualling Yards:													
Gibraltar - - -	30	-	10	-	20	-	-	-	10	30	-	100	119
Malta - - -	40	20	50	-	30	-	-	20	20	10	10	200	119
Halifax - - -	60	50	-	-	50	-	-	90	80	20	10	360	119
Cape of Good Hope - - -	320	20	-	-	30	-	-	50	70	10	-	500	119
Yokohama - - -	20	-	-	-	100	-	-	20	30	30	-	200	119
Medical Establishments:													
Lisbon - - -	-	60	-	-	-	-	-	-	-	-	-	60	120
Malta - - -	270	500	-	-	-	-	-	80	30	110	10	1,000	120
Bermuda - - -	50	300	-	-	-	-	-	10	20	20	-	400	120
Halifax - - -	50	250	-	-	-	-	-	-	-	-	-	300	120
Jamaica - - -	100	180	-	-	30	-	-	60	30	40	10	450	120
Esquimalt - - -	180	220	-	-	10	-	-	40	100	50	-	600	120
Cape of Good Hope - - -	100	150	-	-	-	-	-	30	10	10	-	300	120
Hong Kong - - -	90	280	-	-	-	-	-	50	50	10	10	490	120
Yokohama - - -	60	230	-	-	10	-	-	40	40	20	-	400	120
TOTAL - - - £.	24,330	20,410	13,740		9,370	4,720	2,490	14,160	6,420	4,900	2,200	102,740	



## APPENDIX, No. 20.

STATEMENT showing the Number and Designation of the Officers belonging to the Department of the Director of Engineering and Architectural Works, with their Distribution among the several Votes.

ESTABLISHMENTS.	PERMANENT.							TEMPORARY.					
	Vote under which Pay is provided.	Designation.						Vote under which Pay is provided.	Designation.				
		Heads of Branches.	Superintending Civil Engineers.	Assistant Civil Engineers.	Clerks of Works.	Draughtsmen, Clerks, &c.	Foremen.		Superintending and Assistant Civil Engineers.	Clerks of Works.	Draughtsmen and Clerks.	Foremen.	Office Keepers.
London - - -	No. 3	4	-	-	-	18	-	-	-	-	7	1	-
Greenwich - - -	No. 5	-	-	-	1	-	-	-	-	-	1	-	-
atham - - -	-	-	1	-	1	* 6	-	-	-	2	2	7	2
erness - - -	-	-	-	-	1	1	-	-	-	-	1	1	1
rtsmouth - - -	-	-	1	-	2	2	2	-	1	-	5	7	1
vonport and Keyham - - -	-	-	-	-	1	2	-	-	-	-	1	3	1
mbroke - - -	-	-	-	1	-	1	-	-	-	-	2	1	1
rtland Breakwater - - -	No. 6	-	-	1	-	-	-	-	-	-	2	1	-
braltar - - -	-	-	-	-	1	-	-	-	-	-	2	1	-
alta - - -	-	-	-	-	1	1	1	-	-	-	2	-	-
rnuda - - -	-	-	-	-	1	-	-	No. 11	-	-	-	2	1
pe of Good Hope - - -	-	-	-	-	1	-	-	-	-	-	-	-	-
ptford - - -	-	-	-	-	-	-	1	-	-	-	-	-	-
osport - - -	No. 7	-	-	-	1	1	-	-	-	-	1	-	-
ymouth - - -	-	-	-	1	-	1	-	-	-	1	1	1	-
almer - - -	No. 9	-	-	-	1	-	-	-	-	-	-	-	-
ymouth Breakwater - - -	-	-	-	-	-	-	-	-	1	-	1	-	-
ulbowline - - -	-	-	-	-	-	-	-	-	1	1	2	3	-
derney - - -	-	-	-	-	-	-	-	-	-	1	-	1	-
rmouth - - -	-	-	-	-	-	-	-	-	-	1	-	-	-
ast Guard - - -	-	-	-	-	-	-	-	-	-	-	-	3	-
lifax - - -	-	-	-	-	-	-	-	-	-	-	1	1	-
TOTAL - - -	-	4	2	3	12	*33	† 4	-	3	6	31	33	7

\* Including Two Established Writers attached to the Department.

† These Foremen of Works are Supernumeraries on the Establishment, and their successors will be on the Temporary List.

No.	The following are the Number and Rates of Pay of the Temporary Staff.
3	Superintending and Assistant Civil Engineers, from 200 l. to 600 l. per annum.
5	Clerks of Works, varying from 12 s. 6 d. per day to 19 s. 2 d. per day.
31	Draughtsmen and Clerks, varying from 4 s. 2 d. per day to 16 s. per day.
33	Foremen, varying from 5 s. per day to 250 l. per annum.
7	Office Keepers, varying from 2 s. 6 d. per day to 4 s. per day.
1	Clerk of Works under War Department; special allowance in addition to his pay, 150 l. per annum.
80	- - - TOTAL.

Note.—The foregoing appointments are temporary, and liable to change in proportion to the character and extent of the works authorised for which this extra superintendence is required.

## APPENDIX, No. 21.

A RETURN, giving an Analysis, in Classes, of the EXPENDITURE in the Year 1875-76 (the last Financial Year closed), for MISCELLANEOUS PAYMENTS and ALLOWANCES.

Class.		£.	s.	d.
1	Expenses in procuring condemnation of Piratical Junks captured by Her Majesty's Ships - - - - -	18	12	6
2	Payments to Professional Persons and others unconnected with Establishments, and not in Her Majesty's Service, viz.: Hired Interpreters, Watchmen, and for Medical Examinations for Compassionate Fund, &c. - - - - -	1,555	14	2
3	Subsistence, Travelling, and other Expenses in connection with the Employment of Naval Officers, &c., on Special Services relating to the Navy, viz.: in connection with Revision of the Queen's Regulations, Revised Lighting and Signalling Systems for the Fleet, Torpedo Experiments, &c., Religious Services for the Fleet, also Allowance (in addition to Reserved Half Pay) to Seamen's Barrack Master at Sheerness - - - - -	1,717	6	10
4	Wages of Signalmen, Lightkeepers, Caretakers, &c. - - - - -	221	5	6
5	Presentations for Services rendered to Her Majesty's Navy - - - - -	108	14	3
6	Expenses incurred on account of Her Majesty and the Royal Household - - - - -	1,615	11	6
7	Postages by Captains, Paymasters, and Consuls; Conveyance of Despatches and Mails; Quarantine Expenses; Harbour Dues, &c. - - - - -	647	8	7
8	Freight of Specie - - - - -	439	17	7
9	Expenses connected with Naval Ordnance Stores, being for Conveyance and Stowage of Guns, Powder, Shot and Shell; and other Charges connected therewith - - - - -	449	13	8
10	Rents of Property unconnected with Establishments - - - - -	599	13	10
11	Miscellaneous Expenses of Boys in Training Ships - - - - -	2,438	16	6
12	Expenses in connection with Bands on board Her Majesty's Ships - - - - -	227	7	2
13	Expenses incurred in connection with the Visit of H.R.H. the Prince of Wales to India - - - - -	11,604	2	5
14	Sundry items which cannot be classified under any of the above, viz.: Boat Hire for Her Majesty's Ships; Excess Cost of Watering the Town of Port Royal, Jamaica; Expenses attending Launch of H.M.S. "Alexandria"; Grants to Widows of men lost in the Yacht "Mistletoe"; Pay of Equerry to Duke of Edinburgh; Measuring Ships for the Suez Canal; Expenses connected with Beacons; Removing Dirt and Ashes from Her Majesty's Ships; Annual Grant to Admiralty Library; Extra Pay of Non-Commissioned Officers of Royal Marines acting as Savings Banks Clerks; and various other charges of small amount - - - - -	3,312	4	3
TOTAL EXPENDITURE for Miscellaneous Payments and Allowances in the Year 1875-76 - - - - -		24,956	8	9

APPENDIX, No. 22.

EXPLANATORY STATEMENT to VOTE No. 15.

HALF PAY, RESERVED HALF PAY, and RETIREMENT to OFFICERS of the NAVY and ROYAL MARINES—(page 130).

Members for 1877-78.	Number unemployed on 1 Jan. 1877.	RANK.	Rate of Half Pay or Retirement.		TOTAL of each Class. (365 Days.)	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
			Daily.	Annual. (365 Days.)			
ACTIVE LIST.							
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
38	38	Admirals of the Fleet	3 7 -	1,222 15 -	3,668 5 -	23,761 10 -	23,487 15 -
	8	Admirals	2 2 -	766 10 -	6,132 - -		
	12	Vice-Admirals	1 12 6	593 2 6	7,117 10 -		
	15	Rear-Admirals	1 5 -	456 5 -	6,843 15 -		
85	84	Captains	- 16 6	301 2 6	4,516 17 6	21,024 - -	21,434 12 6
	21	Ditto	- 14 6	264 12 6	5,557 2 6		
	48	Ditto	- 12 6	228 2 6	10,950 - -		
42	58	Commanders	- 10 -	182 10 -	3,467 10 -	9,517 7 6	7,008 - -
	39	Ditto	- 8 6	155 2 6	6,049 17 6		
216	184	Lieutenants	{ From 4 - To - 8 6	{ 73 - - 155 2 6 }	16,230 6 8	16,230 6 8	18,396 - -
	1	Staff Captain	- 16 -	292 - -	292 - -	292 - -	Nil.
81	67	Staff Commanders and Navigating Lieutenants	{ From 6 - To - 16 -	{ 109 10 - 292 - - }	11,004 15 -	11,004 15 -	12,565 2 6
	-	Chief Inspector of Machinery	- 16 -	292 - -	Nil.	Nil	Nil.
1	1	Inspector of Machinery	- 16 -	292 - -	292 - -	292 - -	292 - -
27	27	Chief Engineers	{ From 6 - To - 16 -	{ 109 10 - 292 - - }	4,434 15 -	4,434 15 -	4,631 2 6
	4	Chaplains	{ From 6 - To 1 2 -	{ 109 10 - 401 10 - }	903 17 1	903 17 1	985 10 -
-	3	Naval Instructors	{ From 6 - To - 16 -	{ 109 10 - 292 - - }	328 10 -	328 10 -	Nil.
	1	Inspectors General of Hospitals	1 18 -	693 10 -	693 10 -	2,354 5 -	2,354 5 -
1	Ditto	1 17 -	675 5 -	675 5 -			
2	Deputy	1 7 -	492 15 -	985 10 -			
40	37	Fleet Surgeons and Staff Surgeons	{ From 11 - To - 18 6	{ 200 15 - 337 12 6 }	10,128 15 -	10,128 15 -	10,220 - -
	9	Surgeons	{ From 6 - To - 11 -	{ 109 10 - 200 15 - }	1,314 - -	1,314 - -	2,326 12 6
1	2	Secretaries	{ 1 at - 16 - 1 at - 14 -	{ 292 - - 255 10 - }	292 - - 255 10 -	547 10 -	292 - -
	41	Paymasters	{ From 6 - To - 16 -	{ 109 10 - 292 - - }	8,043 13 9	8,043 13 9	9,964 10 -
For 1 Secretary and 6 Paymasters on Full Pay as Secretaries, allowed 5 s. a day out of their Half Pay (having elected old Regulations)			- 5 -	91 5 -	638 15 -	638 15 -	912 10 -
To provide for improved scale of Half-pay to Inspectors of Machinery and Chief Engineers						548 - -	-
To provide for anticipated promotions from the Sub-Lieutenants' list, &c.						2,000 - -	2,000 - -
607	560	TOTAL ACTIVE LIST			£.	113,364 - -	116,920 - -



## APPENDIX, No. 22.—HALF PAY, RESERVED HALF PAY, and RETIREMENT to OFFICERS of the NAVY and ROYAL MARINES—continued.

Numbers for 1876-77.	Number unemployed on 1 Jan. 1877	RANK.	Rate of Half Pay or Retirement.		TOTAL of each Class. (365 Days.)	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Y 1876/77.
			Daily.	Annual. (365 Days.)			
RESERVED LIST.							
(Under Her Majesty's Orders in Council of 25 June 1851, 29 December 1853, 1 August 1860, and 9 July 1864.)							
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
	1	Admiral - - - - -	2 2 -	766 10 -	766 10 -		
	1	Ditto - - - - -	1 12 6	593 2 6	593 2 6		
2	2	{ In receipt of Retired Service Pensions -				1,359 12 6	1,359 12 6
	34	Admirals - - - - -	1 5 -	456 5 -	15,512 10 -		
	13	Vice-Admirals - - - - -	1 5 -	456 5 -	5,931 5 -		
54	47					21,443 15 -	24,637 10
44	88	Commanders - - - - -	{ Orders in Council, 25 June 1851, 30 January 1856, and 1 August 1860 -	{ From 8 6 To - 12 6	155 2 6 232 13 9	6,829 10 -	
80	79	Staff Commanders and Navigating Lieutenants - - - - -	{ From 5 - To - 15 6	91 5 - 232 17 6	10,156 2 6	6,829 10 -	7,888 10 -
						10,156 2 6	10,247 7 6
180	166	TOTAL RESERVED LIST - - - - -				£. 39,789 - -	44,133 - -
RETIRED LIST:							
(Under Admiralty Circular, 31 August 1846, and Her Majesty's Orders in Council, 10 August 1840, 25 June 1851, 30 January 1856, 1 August 1860, 9 July 1864, 16 February 1866, 24 March 1866, 26 June 1867, and 22 February 1870, 5 February 1872, 9 August 1872, and 4 August 1873, 4 February 1875, and 5 August 1875.)							
NAVAL OFFICERS:							
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
7		Admirals - - - - -	2 2 -	766 10 -	5,365 10 -		
2		Vice ditto - - - - -	1 12 6	593 2 6	1,186 5 -		
1		Ditto - - - - -	1 5 -	456 5 -	456 5 -		
9	10	{ In receipt of Greenwich Hospital Pensions (Order in Council, 16 February 1866) -				7,008 - -	6,241 10 -
	16	Admirals - - - - -	1 5 -	456 5 -	7,300 - -		
	9	Vice ditto - - - - -	1 5 -	456 5 -	4,106 5 -		
	1	Ditto - - - - -	1 - -	365 - -	365 - -		
31	26					11,771 5 -	13,505 - -
27	24	Rear-Admirals (with Pay of Retired Captain).	1 - -	365 - -	8,760 - -		
						8,760 - -	9,855 - -
20		Vice-Admirals - - - - -	1 5 -	456 5 -	9,125 - -		
1		Ditto - - - - -	- 14 6	264 12 6	264 12 6		
37		Rear-Admirals - - - - -	1 5 -	456 5 -	16,881 5 -		
29		Ditto - - - - -	- - -	{ From 447 2 6 To 600 - -	16,997 2 6		
84	87					43,268 - -	41,503 - -
	1	Admiral - - - - -	3 2 -	1,131 10 -	1,131 10 -		
	14	Ditto - - - - -	2 2 -	766 10 -	10,731 - -		
	13	Vice ditto - - - - -	1 12 6	593 2 6	7,710 12 6		
29	28					19,573 2 6	19,992 17 6
	12	Admirals - - - - -	- - -	{ From 665 - - To 1,192 9 -	10,173 19 -		
	21	Vice ditto - - - - -	- - -	{ From 635 - - To 800 - -	13,995 - -		
	2	Rear ditto - - - - -	- - -	{ From 530 - - To 675 - -	1,130 - -		
38	35					25,298 19 -	27,237 9 -
	1	Captain - - - - -	1 - -	365 - -	365 - -		
	43	Ditto - - - - -	- 10 6	191 12 6	8,239 17 6		
48	44					8,604 17 6	9,544 15 -
266	254	Carried forward - - - - -				£. 124,284 4 -	127,879 11 6



## APPENDIX, No. 22.—HALF PAY, RESERVED HALF PAY, and RETIREMENT to OFFICERS of the NAVY and ROYAL MARINES—continued.

Numbers for	Number unemployed on 1 Jan. 1877.	RANK.	Rate of Half Pay or Retirement.		TOTAL of each Class. (365 Days.)	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.
			Daily.	Annual. (365 Days.)			
		RETIRED LIST—continued.					
		NAVAL OFFICERS—continued.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
266	254	- - - - - Brought forward - -	- - -	- - -	- - -	124,284 4 -	127,879 11 6
		(Under Admiralty Circular, 31 August 1846, and Her Majesty's Orders in Council, 10 August 1840, 25 June 1851, 30 January 1856, 1 August 1860, 9 July 1864, 16 February 1866, 24 March 1866, 26 June 1867, and 22 February 1870, 5 February 1872, 9 August 1872, and 4 August 1873, 4 February 1875, and 5 August 1875)—continued.					
	26	Captains - (Orders in Council, 1 August 1860, 9 July 1864, and 24 March 1866) - - -	1 - -	365 - -	9,490 - -		
	10	Ditto - - - - -	- 18 -	328 10 -	3,285 - -		
45	39	Ditto - - - - -	- 10 -	292 - -	876 - -	13,651 - -	15,768 - -
78	75	Captains - (Order in Council, 22 February 1870, and 4 August 1873).	- -	{From 228 2 6 To 600 - -}	33 196 12 6	33,196 12 6	34,836 12 6
	149	Captains, from Commanders' List - - - (Orders in Council, 1 August 1860, 9 July 1864, and 24 March 1866) - - -	{From 10 - To - 17 9}	182 10 - 323 18 9}	33,625 12 6		
	86	Ditto - ditto - - - (Order in Council, 22 February 1870, and 4 August 1873) -	- -	{From 182 10 - To 400 - -}	28,137 10 -	61,763 2 6	53,241 3 9
210	295	Captains, from Navigating List - - - (Orders in Council, 28 February 1855, 22 February 1860, and 26 June 1867) -	{From 13 - To 1 4 -}	237 5 - 438 - -}	9,198 - -		
	27	Ditto - ditto - - - (Order in Council, 22 February 1870) - - -	- -	{From 292 - - To 450 - -}	11,152 - -	20,350 - -	19,709 7 6
53	54	Commanders - - - (Order in Council, 30 January 1816).	- 8 6	155 2 6	15,512 10 -		
	54	Ditto - - - - - (Orders in Council, 1 November 1830, and 9 July 1864)	- 7 -	127 15 -	6,898 10 -		
187	155	Ditto - - - - - ditto - - -	- 4 -	73 - -	73 - -	22,484 - -	26,517 5 -
	6	Ditto - - - - - (Orders in Council, 1 August 1860, and 9 July 1864)	{From 8 6 To - 12 9}	155 2 6 232 18 9}	1,218 3 9		
109	69	Ditto - (Order in Council, 22 February 1870, and 4 August 1873).	- -	{From 155 2 6 To 400 - -}	18,426 12 6	19,644 16 3	30,737 6 3
	152	Commanders, from Lieutenants' List - - (Orders in Council, 1 August 1860, 9 July 1864, and 24 March 1866)	{From 4 - To - 14 6}	73 - - 264 12 6}	24,309 - -		
288	239	Ditto - - - ditto - - - (Order in Council, 22 February 1870, and 4 August 1873) -	- -	{From 91 5 - To 300 - -}	24,827 2 6	49,196 2 6	50,134 3 9
	1	Commander, from Navigating List - - (Order in Council, 19 May 1846) -	- 12 6	228 2 6	228 2 6		
	4	Ditto - - - ditto - - -	- 10 6	191 12 6	766 10 -		
	5	Ditto - ditto - - - (Orders in Council, 28 February 1855, 22 February 1860, and 26 June 1867) -	{From 13 - To - 17 6}	237 5 - 319 7 6}	1,387 - -		
33	31	Ditto - - - ditto - - - (Order in Council, 22 February 1870)	- -	{From 225 - - To 400 - -}	7,527 - -	9,908 12 6	10,298 2 6
75	82	Lieutenants (Order in Council, 22 February 1870, and 4 August 1873)	- -	{From 73 - - To 300 - -}	8,750 12 6	8,750 12 6	8,493 17 6
39	35	Sub-Lieutenants - - - - -	{From 2 6 To - 5 -}	45 12 6 91 5 -}	2,746 12 6	2,746 12 6	3,111 12 6
30	30	Staff Commanders - (Order in Council, 22 February 1870).	- -	{From 164 5 - To 390 - -}	7,381 10 -	7,381 10 -	7,471 10 -
51	57	Navigating Lieutenants (Order in Council, 22 February 1870).	- -	{From 91 5 - To 300 - -}	9,001 10 -	9,001 10 -	8,096 15 -
6	6	Navigating Sub-Lieutenants - - -	{From 2 6 To - 6 -}	45 12 6 109 10 -}	483 12 6	483 12 6	483 12 6
470	1,411	- - - - - Carried forward - - -	- -	- - -	£.	382,782 7 9	396,839 - 3

APPENDIX, No. 22.—HALF PAY, RESERVED HALF PAY, and RETIREMENT to OFFICERS of the NAVY and ROYAL MARINES—continued.

Numbers for 1876-77.	Number unemployed on 1 Jan, 1877.	R A N K.	Rate of Half Pay or Retirement.		TOTAL of each Class. (365 Days.)	REQUIRRED for the Service of the Year 1877/78.	LAST VOT for the Financial 1876/77.
			Daily.	Annual. (365 Days.)			
		RETIRED LIST—continued. NAVAL OFFICERS—continued.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
1,470	1,411	- - - - - Brought forward - - -	- - -	- - -	- - -	382,782 7 9	396,839 -
		(Under Admiralty Circular, 31 August 1846, and Her Majesty's Orders in Council, 10 August 1840, 25 June 1851, 30 January 1856, 1 August 1860, 9 July 1864, 16 February 1866, 24 March 1866, 26 June 1867, 22 February 1870, 5 February 1872, 9 August 1872, and 4 August 1873, 4 February 1875, and 5 August 1875)—continued.					
7	6	Chief Inspectors of Machinery - (Order in Council, 22 February 1870).	- - -	{ From 315 - - To - 450 - - }	2,555 - -	2,555 - -	2,900 -
	1	Inspector of Machinery - - - - -	- 15 6	282 17 6	282 17 6		
	1	Ditto - - (Order in Council, 22 February 1870).	- - -	390 - -	390 - -	672 17 6	672 17
2	2	Chief Engineers - - - - -	{ From 5 - To - 13 -	91 5 - 237 5 -	2,117 - -		
	99	Ditto - - - (Order in Council, 22 February 1870).	- - -	{ From 91 5 - To - 400 - - }	28,033 - -	30,150 - -	29,341 -
113	115	Chaplains - - - - -	{ From 5 - To - 17 -	91 5 - 310 5 -	6,893 18 9		
	19	Ditto - - - (Order in Council, 22 February 1870).	- - -	{ From 127 15 - To - 450 - - }	5,513 17 6	12,407 16 3	12,487 6
63	62	Naval Instructors - - - - -	{ From 4 6 To - 12 -	82 2 6 219 - -	2,372 10 -		
	6	Ditto - - - (Order in Council, 22 February 1870).	- - -	{ From 127 15 - To - 400 - - }	1,479 7 6	3,851 17 6	3,660 5
21	22	Inspectors General of Hospitals and Fleets -	{ From 1 2 6 To - 1 17 6	410 12 6 684 7 6	2,190 - -		
	6	Ditto - - - (Orders in Council, 22 February 1870, and 4 February 1875)	{ From 1 14 - To - 2 - -	620 10 - 730 - -	4,234 - -	6,424 - -	7,432 1
12	10	Deputy Inspectors General of Hospitals and Fleets -	{ From - 13 - To - 1 1 -	237 5 - 383 5 -	8,221 12 6		
	19	Ditto - - - (Order in Council, 22 February 1870).	- - -	{ From 383 5 - To - 492 15 - }	7,785 15 -	16,007 7 6	15,151 15
41	43	Fleet Surgeons - - - - -	{ From 12 - To - 18 6	219 - - 337 12 6	4,836 5 -		
	39	Ditto - - - (Order in Council, 22 February 1870).	- - -	{ From 273 15 - To - 450 - - }	14,115 5 -	18,951 10 -	19,346 -
	82	Staff Surgeons - - - - -	{ From 5 - To - 13 6	91 5 - 246 7 6	15,640 5 -		
174	159	Ditto - - - - -	- 3 -	54 15 -	54 15 -		
	21	Ditto - - - (Order in Council, 22 February 1870).	- - -	{ From 200 15 - To - 300 - - }	5,232 10 -	20,927 10 -	22,670 7
	18	Surgeons - - - - -	{ From 3 - To - 10 -	54 15 - 182 10 -	2,326 11 -		
	19	Ditto - - - (Order in Council, 22 February 1870).	- - -	{ From 73 - - To - 200 - - }	2,753 10 -	5,080 1 -	4,989 17
37	37	Secretary - - - - -	- 17 -	310 5 -	310 5 -	310 5 -	310 5
1	1	Paymaster-in-Chief (Order in Council, 9 July 1864).	- 17 -	310 5 -	310 5 -		
	3	Paymasters-in-Chief { (Orders in Council, 5 April 1852, and 9 July 1864) - - }	- 14 -	255 10 -	766 10 -		
	38	Ditto - - - (Order in Council, 22 February 1870).	- - -	{ From 305 - - To - 450 - - }	14,490 - -	15,566 15 -	15,322 5
42	42	Paymasters - - - { (Pensioned from Civil Employment) - }	- 9 - - 7 -	164 5 - 127 15 -	164 5 - 383 5 -		
	1	Paymasters - (Order in Council, 1852)	{ From 5 - To - 14 -	91 5 - 255 10 -	9,663 7 6	547 10 -	547 10
	62	Ditto - - - (Order in Council, 22 February 1870).	- - -	{ From 91 5 - To - 430 - - }	14,999 12 6		
128	124	Assistant Paymasters - ditto - - -	{ From 2 6 To - 6 -	45 12 6 109 10 -	4,973 2 6	4,973 2 6	5,256 -
	57	To provide for anticipated Retirement of Chief Engineers - - - - -	- - -	- - -	- - -	4,200 - -	-
2,175	2,095	TOTAL RETIRED LIST of NAVAL OFFICERS - - - - -	- - -	- - -	£. 550,071 - -	561,533 -	-

APPENDIX, No. 22.—HALF PAY, RESERVED HALF PAY, and RETIREMENT to OFFICERS of the NAVY and ROYAL MARINES—continued.

Members for 76-77.	Number unemployed on 1 Jan. 1877.	RANK.	Rate of Half Pay or Retirement.		TOTAL of each Class. (365 Days.)	REQUIRED for the Service of the Year 1877/78.	LAST VOTE for the Financial Year 1876/77.	
			Daily.	Annual. (365 Days.)				
		RETIRED LIST—continued.						
		MARINE OFFICERS:						
		General Officers, &c., on the Fixed Establish- ment.						
		Artillery:						
	1	General - - - - -	} 2 - -	730 - -	2,190 - -	2,790 - -	2,190 - -	
	1	Lieutenant-General - - - - -						
	1	Major-General - - - - -						
	1	Colonel - - - - -						
3	4	Light Infantry:						
	1	General - - - - -	} 1 18 6	702 12 6	5,621 - -	6,521 - -	7,421 - -	
	1	Ditto - - - - -						
	2	Lieutenant-Generals - - - - -						
	5	Major-Generals - - - - -						
10	9	Retired Full Pay:						
	1	Lieutenant-General - - - - -	2 5 -	821 5 -	821 5 -	20,035 9 7	20,557 2 6	
	2	Major-Generals - - - - -	2 - -	730 - -	1,460 - -			
	9	Ditto - - - - -	1 18 6	702 12 6	6,323 12 6			
	4	Ditto - - - - -	1 5 -	456 5 -	1,825 - -			
	1	Lieutenant-Colonel - - - - -	- - -	400 - -	400 - -			
	4	Ditto - - - - -	1 - -	365 - -	1,460 - -			
	11	Ditto - - - - -	- 17 -	310 5 -	3,412 15 -			
	1	Captain - - - - -	- 16 -	292 - -	292 - -			
	1	Ditto - - - - -	- 14 1	257 - 5	257 - 5			
	2	Ditto - - - - -	- 13 7	247 17 11	495 15 10			
	14	Ditto - - - - -	- 11 7	211 7 11	2,959 10 10			
	1	Ditto - - - - -	- 10 6	191 12 6	191 12 6			
	1	Lieutenant - - - - -	- 7 6	136 17 6	136 17 6			
54	52	Reserved Half Pay:						
	1	Colonel - - - - -	- 14 6	264 12 6	264 12 6	264 12 6	264 12 6	
		Retired Pay:						
	1	Lieutenant-Colonel - - - - -	- 17 6	319 7 6	319 7 6	9,976 7 1	10,453 14 2	
	2	Ditto - - - - -	- 9 6	173 7 6	346 15 -			
	1	Ditto - - - - -	- 8 4	152 1 8	152 1 8			
	1	Ditto - - - - -	- 7 4	133 16 8	133 16 8			
	1	Major - - - - -	- 15 -	273 15 -	273 15 -			
	2	Ditto - - - - -	- 8 4	152 1 8	304 3 4			
	2	Ditto - - - - -	- 8 -	146 - -	292 - -			
	1	Ditto - - - - -	- 7 4	133 16 8	133 16 8			
	6	Ditto - - - - -	- 7 -	127 15 -	766 10 -			
	7	Captains - - - - -	- 7 4	133 16 8	936 10 5			
	19	Ditto - - - - -	- 7 -	127 15 -	2,427 5 -			
	4	Quartermasters - - (Order in Council of 25 June 1857).	- 10 -	182 10 -	730 - -			
	3	Lieutenants - - - - -	- 4 8	85 3 4	255 10 -			
	28	Ditto - - - - -	- 4 6	82 2 6	2,299 10 -			
	1	Ditto - - - - -	- 3 2	57 15 10	57 15 10			
	10	Ditto - - - - -	- 3 -	54 15 -	547 10 -			
94	89	Retired Pay:						
		(Under Order in Council, 22 February 1870, and 5 February 1872.)						
	1	General - - - - - (Artillery) - - -	- - -	900 - -	900 - -	15,529 10 10	12,990 10 10	
	2	Ditto - - - - - } Light Infantry - - -	{ 1 18 6	900 - -	1,800 - -			
	1	Ditto - - - - -		702 12 6	702 12 6			
	1	Colonel - - - - -		375 - -	375 - -			
	4	Colonels - - - - -		300 - -	1,200 - -			
	4	Lieutenant-Colonels - - - - -	- - -	450 - -	1,800 - -			
	1	Ditto - - - - -	- - -	425 - -	425 - -			
	1	Ditto - - - - -	- - -	400 - -	400 - -			
	15	Ditto - - - - -	- - -	300 - -	4,500 - -			
	1	Ditto - - - - -	- - -	200 - -	200 - -			
	3	Majors - - - - -	- - -	300 - -	900 - -			
	3	Ditto - - - - -	- - -	275 - -	825 - -			
	1	Ditto - - - - -	- - -	225 - -	225 - -			
	3	Ditto - - - - -	- - -	208 - -	624 - -			
	1	Captain - - - - -	- - -	148 - -	148 - -			
	1	Lieutenant - - - - -	- 4 6	82 2 6	82 2 6			
	1	Ditto - - - - -	- 4 2	76 - 10	76 - 10			
	4	Ditto - - - - -	- 4 -	73 - -	292 - -			
	1	Ditto - - - - -	- 3 -	54 15 -	54 15 -			
44	49	To provide for Retirements of Marine Officers (Scheme under revision) - - - - -						
						15,529 10 10	12,990 10 10	
						5,000 - -	- - -	
		TOTAL HALF PAY and RETIREMENT, MARINE OFFICERS - - - - -						
					£.	60,117 - -	53,877 - -	
206	204							







## RETABULATION OF THE NAVY ESTIMATES

Into Divisions representing Heads of Service, with the view of enabling Final Expense and Manufacturing Accounts to be compiled, so as to be in accord with the Estimates, Appropriation Account, and Statement of Surpluses and Deficits, in order to make the formerly varied and apparently unconnected Naval Accounts into one great Account.

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### “EXPLANATION.

“FORMERLY only the Estimates, and the Appropriation, and Savings and Deficiencies Accounts (now called Surpluses and Deficits), were uniform, or had any traceable connection as to figures; the Expense Accounts, for all the outside world could tell, had no connection with the money as voted in the Estimates, or as expended in the Appropriation, and Savings and Deficiencies Accounts, and the Manufacturing Accounts had no figures that could be traced either to the Expense Accounts, or Estimates, or Appropriation, and Savings and Deficiencies Accounts; so that there were practically three distinct sets of Accounts for the expenditure of the same money as voted, not one of which Accounts appeared to have any relation to another. The first of these consisted of the Estimates, Appropriation, and Savings and Deficiencies Accounts. The second, the Expense Accounts. The third, the Manufacturing and Factory Accounts, and Accounts of Conversions of Timber.

“Under this Retabulation of the Estimates, the form of which all succeeding Accounts will follow, we shall have but one great Account in certain divisions, and Members will be able easily to trace the money the House has voted from the Estimates, through the Appropriation, and Savings and Deficiencies Accounts, into the final Expense and Manufacturing Accounts for each Division.

“Division 1, Naval Yards, brings together into one view all the amounts of the various Votes appertaining to the building, repair, and maintenance of the Fleet and Coastguard, including salaries, wages, stores, all new buildings, and machinery, and repairs to the same, Civil Pensions to Officers and Artificers who were previously employed in connection with such duties; and this Division would represent the money the House of Commons had granted to the Admiralty to use in their capacity of shipbuilders like Napier and Laird, and ship-owners and users like Cunard and the Peninsular and Oriental Company, and will be accounted for in Expense and Manufacturing Accounts under the head of Division 1, Naval Yards.

“Division 2, Victualling, in like manner deals with the Expense of Victualling the Fleet, Coastguard, &c.; and Victualling Expense and Manufacturing Accounts will deal with and account for expenditure under this Division.

“It is proposed to compile Accounts for the other Divisions.

“Another important addition made in this Retabulation, and which will be carried through into the subsequent Accounts, is that each Naval Yard and each Victualling Yard is treated as a separate Establishment, and stands upon its own merits; and each Yard will account for the money that has been disbursed on its behalf in final Expense and Manufacturing Accounts, debiting itself with such money in the same form and manner as in this Retabulation, and accounting for it in Ships built, repaired, and maintained, or in Victualling Stores converted, or issues from each Yard of stores, whether converted or not, to Ships and Services. This will enable a comparison to be made as to the relative economy of each Yard, and will, it is hoped, lead to important results, by giving the Admiralty detailed information.”



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## RETABULATION OF THE NAVY ESTIMATES

Into Divisions representing Heads of Service, with the view of enabling Final Expense and Manufacturing Accounts to be compiled so as to be in accord with the Estimates, Appropriation Account, and Statement of Surpluses and Deficits, in order to make the formerly varied and apparently unconnected Naval Accounts into one great Account.

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RETABULATION of the NAVY ESTIMATES.

RECAPITULATION of the ABSTRACT (given at page 4), of the

“ESTIMATE of the Sums required to meet the Expenses which may be incurred in the Naval Department in the Year 1877-78, as compared with the Sums voted for the preceding Year, under the following heads, viz. :”

DIVISION 1  
(NAVAL YARDS).

No. of Vote.	Page.		1877-78.	1876-77.	No. of Vote.	Page.	1877-78.	1876-77.
ABSTRACT:			£.	£.			£.	£.
1	6	WAGES to Seamen and Marines - - - - -	2,684,048	2,684,904	-	-	-	-
2	11	VICTUALS and CLOTHING for ditto - - - - -	1,178,610	1,153,367	-	-	-	-
3	14	ADMIRALTY OFFICE - - - - -	193,890	189,820	-	-	-	-
4	20	COAST GUARD SERVICE AND ROYAL NAVAL RE- SERVE, &c. - - - - -	207,900	210,230	-	-	-	-
5	23	SCIENTIFIC BRANCH - - - - -	109,002	109,194	-	-	-	-
6	31	DOCKYARDS and NAVAL YARDS at HOME and ABROAD	1,341,680	1,323,750	6	31	1,341,680	1,323,750
7	66	VICTUALLING YARDS at HOME and ABROAD - -	76,980	76,400	-	-	-	-
8	82	MEDICAL ESTABLISHMENTS at HOME and ABROAD -	66,150	65,830	-	-	-	-
9	100	MARINE DIVISIONS - - - - -	21,316	20,053	-	-	-	-
10	106	NAVAL STORES for the Building, Repair, and Outfit of the Fleet and Coast Guard, Steam Machinery, and Ships Built by Contract:						
Sec. I.		Section I. Naval Stores - - - - -	1,207,300	1,261,320	10 (I.)	106	1,207,300	1,261,320
Sec. II.	106	Section II. Steam Machinery, and Ships Built by Contract - - - - -	1,042,000	1,353,600	10 (II.)	"	1,042,000	1,353,600
11	109	NEW WORKS, Buildings, Machinery, and Repairs - -	545,715	569,249	11	-	433,154	462,446
12	122	MEDICINES and Medical Stores - - - - -	78,010	76,230	-	-	-	-
13	124	MARTIAL LAW and LAW CHARGES - - - - -	8,147	15,114	-	-	-	-
14	126	MISCELLANEOUS SERVICES - - - - -	130,134	135,547	-	-	-	-
TOTAL for EFFECTIVE SERVICE - - - £.			8,890,832	9,194,608	-	-	4,024,134	4,401,116
15	130	HALF PAY, Reserved Half Pay, and Retirement to Officers of the Navy and Royal Marines - - - }	880,796	888,472	-	-	-	-
16	131	MILITARY and CIVIL PENSIONS and ALLOWANCES:						
Sec. I.		Section I. Military Pensions and Allowances -	759,940	726,136	-	-	-	-
Sec. II.	131	Section II. Civil Pensions and Allowances - -	279,981	282,176	16 (II.)	-	163,931	161,201
TOTAL FOR THE NAVAL SERVICE - £.			10,811,549	11,091,392	-	-	4,188,065	4,562,317
FOR THE SERVICE OF OTHER DEPARTMENTS OF GOVERNMENT:								
17	143	ARMY DEPARTMENT (Conveyance of Troops) - - -	168,280	197,480	-	-	-	-
GRAND TOTAL - - - £.			10,979,829	11,288,872				
TOTAL - - - £.							4,188,065	4,562,317



## RETABULATION of the NAVY ESTIMATES.

DIVISION 2 (VICTUALLING).				OTHER DIVISIONS.				GRAND TOTAL.			
No. of Vote.	Page.	1877-78.	1876-77.	No. of Vote.	Page.	1877-78.	1876-77.	No. of Vote.	Page.	1877-78.	1876-77.
		£.	£.			£.	£.			£.	£.
-	-	-	-	1	6	2,684,048	2,684,904	1	6	2,684,048	2,684,904
2	-	1,080,385	1,055,138	2	-	98,225	98,229	2	11	1,178,610	1,153,367
-	-	-	-	3	14	193,890	189,820	3	14	193,890	189,820
-	-	-	-	4	20	207,900	210,230	4	20	207,900	210,230
-	-	-	-	5	23	109,002	109,194	5	23	109,002	109,194
-	-	-	-	-	-	-	-	6	31	1,341,680	1,323,750
7	66	76,930	76,400	-	-	-	-	7	66	76,930	76,400
-	-	-	-	8	82	66,150	65,830	8	82	66,150	65,830
-	-	-	-	9	100	21,316	20,053	9	100	21,316	20,053
-	-	-	-	-	-	-	-	10 (I.)	106	1,207,300	1,261,320
-	-	-	-	-	-	-	-	10 (II.)	"	1,042,000	1,353,600
11	-	15,990	19,388	11	109	96,571	87,415	11	109	545,715	569,249
-	-	-	-	12	122	78,010	76,230	12	122	78,010	76,230
-	-	-	-	13	124	8,147	15,114	13	124	8,147	15,114
-	-	-	-	14	126	130,134	135,547	14	126	130,134	135,547
-	-	1,173,305	1,150,926	-	-	3,693,393	3,642,566	-	5	8,890,832	9,194,608
-	-	-	-	15	130	880,796	888,472	15	130	880,796	888,472
-	-	-	-	16 (I.)	131	759,940	726,136	16 (I.)	131	759,940	726,136
16 (II.)	-	11,179	11,264	16 (II.)	"	104,871	109,711	16 (II.)	"	279,981	282,176
-	-	1,184,484	1,162,190	-	-	5,439,000	5,366,885	-	5	10,811,549	11,091,392
-	-	-	-	17	143	168,280	197,480	17	143	168,280	197,480
-	-	1,184,484	1,162,190	-	-	5,607,280	5,564,365	-	5	10,979,829	11,288,872



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**DIVISION 1.**  
**NAVAL YARDS.**

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## RETABULATION of the NAVY ESTIMATES.—DIVISION 1. NAVAL YARDS (for DETAILS, see pages 220 and 221).

for the "NAVAL YARDS, &amp;c." for the BUILDING, REPAIR, and OUTFIT of the FLEET and COAST GUARD, &amp;c., for each NAVAL DOCKYARD.

PORTSMOUTH.		DEVONPORT and KEYHAM.		PEMBROKE.		HAULBOWLINE.		TOTAL of HOME YARDS.		NAVAL YARDS ABROAD.		TOTAL of YARDS at HOME and ABROAD.		OTHER THAN YARDS (i.e. Contract Ships, and Sums not chargeable to any Yard.)		TOTAL DIVISION I. NAVAL YARDS.		Number of Vessels.
1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.	
£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	
378,520	372,892	326,118	326,498	110,387	110,255	1,325	919	1,210,789	1,203,657	130,891	120,093	1,341,680	1,323,750	-	-	1,341,680	1,323,750	6
27,880	500,500	274,100	239,850	79,700	119,620	3,150	1,300	1,017,300	1,126,320	45,000	35,000	1,092,300	1,161,320	115,000	100,000	1,207,300	1,261,320	10
111,250	83,645	35,250	23,497	127,730	113,458	-	-	404,620	305,145	-	-	404,620	305,145	637,380	1,048,455	1,042,000	1,353,600	Sec.I.
123,998	175,690	70,576	60,914	16,798	18,640	28,020	32,490	362,535	397,289	70,619	65,157	433,154	462,446	-	-	433,154	462,446	11
889,568	941,527	666,344	650,759	334,615	361,973	32,495	37,709	3,025,244	3,032,411	246,510	220,250	3,271,754	3,252,661	752,380	1,148,455	4,024,134	4,401,116	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	163,931	161,201	163,931	161,201	16
889,568	941,527	666,344	650,759	334,615	361,973	32,495	37,709	3,025,244	3,032,411	246,510	220,250	3,271,754	3,252,661	916,311	1,309,656	4,188,065	4,562,317	Sec.II.
889,568	941,527	666,344	650,759	334,615	361,973	32,495	37,709	3,025,244	3,032,411	246,510	220,250	3,271,754	3,252,661	916,311	1,309,656	4,188,065	4,562,317	



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DIVISION I.

(NAVAL YARDS.)

DETAILS OF PAGES 216 AND 217.

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# RETABULATION of the NAVY ESTIMATES.—DIVISION I.—NAVAL YARDS.—DETAILS of pages 216 and 217.

Number of Vots.	Sub-Head Reference Letter.		TITLE OF SUB-HEAD OF VOTE.	DEPTFORD STOREYARD.			CHATHAM.			SHEERNESS.			PORTSMOUTH.			DEVONPORT AND KEYHAM.		
	Home.	Abroad.		Page.	1877-78.	1876-77.	Page.	1877-78.	1876-77.	Page.	1877-78.	1876-77.	Page.	1877-78.	1876-77.	Page.	1877-78.	1876-77.
6			VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD.															
	A.	K.	SALARIES AND ALLOWANCES - - - - -	232	£. 1,706	£. 1,071	232	£. 21,849	£. 20,434	232	£. 16,985	£. 16,855	232	£. 28,037	£. 26,254	232	£. 30,148	£. 29,666
	B.	L.	RENTS, WATER, &c. - - - - -	-	-	-	-	385	164	-	1	1	-	2,464	2,467	-	1,646	1,647
	C.	M.	GAS - - - - -	-	-	-	-	1,000	1,300	-	1,000	1,050	-	2,700	2,500	-	1,700	1,700
	D.	N.	CONTINGENCIES - - - - -	232	64	64	-	777	802	-	545	545	-	1,177	1,177	-	961	911
	E.	O.	WAGES, Established, Hired, and Steam Factory, &c. (excluding Vote 11) - - -	-	5,025	5,225	-	212,205	214,230	-	108,766	107,726	-	320,002	310,207	-	272,395	273,942
	F.	P.	WAGES, &c. Yard Service Afloat - - - - -	233	70	70	233	3,500	3,500	233	5,555	5,656	233	8,483	8,914	233	2,523	1,964
	G.	Q.	HIRE OF TEAMS - - - - -	-	-	-	-	2,067	1,766	-	1,450	1,450	-	2,660	2,660	-	7,327	7,349
	H.	R.	WAGES, &c. Police Force - - - - -	233	205	205	-	7,384	7,396	-	2,790	2,804	-	10,998	8,077	-	70	75
	I.	S.	EXTRA PAY TO ARTIFICERS, &c. OF THE FLEET, DOCKYARDS AT HOME AND NAVAL YARDS ABROAD - - -	-	-	-	-	35	35	-	10	5	-	50	80	-	Portland.	Portland.
		Total Vote 6 - - - - -	233	7,130	7,296	-	250,192	249,696	-	137,117	136,101	-	378,520	372,892	232	326,118	326,498	
10 Sect. 1.			VOTE 10, SECT. 1.—NAVAL STORES.															
	A.	-	TIMBER, MASTS, DEALS, &c. - - - - -	194	5,000	6,000	194	20,000	18,500	194	13,000	22,600	194	52,000	61,000	194	56,000	39,140
	B.	-	METAL AND METAL ARTICLES, INCLUDING IRON ARMOUR PLATES, IRON BEAMS, AND IRON MASTS - - - - -	-	24,000	19,000	-	120,000	100,000	-	32,000	27,000	-	124,000	176,000	-	96,000	91,400
	C.	-	COALS AND OTHER FUEL (For Steam Vessels - - - - -)	-	52,000	80,000	-	20,000	24,500	-	4,500	11,000	-	14,500	20,000	-	11,500	27,500
	D.	-	HEMP, CANTAS, &c. (For Yard purposes - - - - -)	-	26,000	17,500	-	42,000	47,000	-	7,000	6,000	-	16,000	9,000	-	57,000	42,500
	E.	-	PAINT MATERIALS, OILS, PITCH, TAR, TALLOW, AND OTHER MISCELLANEOUS ARTICLES - - - - -	-	42,000	27,500	-	17,000	24,000	-	17,500	14,000	-	56,000	53,000	-	30,500	49,000
	F.	-	PURCHASES BY OFFICERS OF SHIPS, FOREIGN YARDS, AND COAST GUARD AND FOR FREIGHT, &c. OF NAVAL STORES - - -	-	9,000	9,000	-	100	100	-	150	150	-	300	300	-	300	250
			Total Vote 10, Sect. 1 - - - - -	-	158,000	159,000	-	225,100	214,100	-	74,150	80,150	-	272,800	309,300	-	234,400	239,850
			VOTE 10, SECT. 2.—STEAM MACHINERY, AND SHIPS BUILT BY CONTRACT.															
	A.	-	STEAM MACHINERY FOR HER MAJESTY'S SHIPS AND VESSELS - - - - -	-	-	-	194	80,590	66,140	194	31,000	3,100	194	68,000	33,500	194	35,000	23,487
B.	-	SHIPS, &c., BUILDING BY CONTRACT - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
C.	-	STEAM BOATS TO BE ORDERED (Engines provided for under Item A.) - - -	-	-	-	194	500	-	194	500	-	194	1,000	2,000	194	500	-	
D.	-	EXPERIMENTAL PURPOSES, &c. - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E.	-	REPAIRS OF SHIPS AT OTHER THAN HER MAJESTY'S DOCKYARDS - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
F.	-	FOR THE SALARIES, PAY, SUBSISTENCE, AND TRAVELLING EXPENSES OF DOCKYARD OFFICERS, WORKMEN, AND OTHERS SUPERINTENDING SHIPS BUILDING BY CONTRACT, AND OTHER WORKS - - - - -	-	-	-	194	10,500	7,305	-	-	-	194	44,500	47,605	194	750	-	
G.	-	HYDRAULIC AND STEAM MACHINERY, &c. AND TORPEDO MACHINERY - - - - -	-	-	-	-	4,000	8,000	194	500	-	-	750	-	-	194	750	
H.	-	FOR BREAKING UP SHIPS - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
I.	-	PURCHASE OF TORPEDOES - - - - -	-	-	-	-	95,590	-	194	32,000	-	-	114,250	-	-	194	35,250	
		Total Vote 10, Sect. 2 - - - - -	-	-	-	194	75,590	81,445	194	32,000	3,100	194	83,645	83,645	194	35,250	23,497	
11			VOTE 11.—NEW WORKS, REPAIRS, &c., NAVAL YARDS ONLY.															
	A. to G.	P.	BUILDINGS - - - - -	-	-	-	110	88,400	71,800	110	4,400	5,730	111	98,040	146,240	111	49,600	37,640
		P.	MACHINERY - - - - -	-	-	-	-	20,210	20,475	-	5,203	6,860	-	20,108	22,700	-	12,216	2,204
			TOTAL - - - - -	-	-	-	-	108,610	92,275	-	9,603	12,590	-	118,148	168,940	-	61,816	39,844
	B.	-	CONTINGENCIES { BUILDINGS - - - - -	-	-	-	-	1,250	1,350	-	500	500	-	1,250	1,250	-	1,000	1,000
			{ MACHINERY - - - - -	-	-	-	-	600	800	-	400	400	-	1,000	1,000	-	600	600
	T.	-	TEMPORARY SUPERINTENDENCE OF ENGINEERING AND ARCHITECTURAL WORKS - - - - -	-	-	-	-	1,770	1,770	-	350	170	-	1,000	2,040	-	770	770
			Total Vote 11, Naval Yards only - - - - -	-	-	-	-	112,230	95,895	-	10,913	13,660	-	120,300	170,490	-	63,376	41,814
			VOTE 16, SECT. 2.—CIVIL PENSIONS AND ALLOWANCES - - -															
			TOTAL DIVISION 1, NAVAL YARDS - - - - -	-	165,130	166,296	-	682,912	641,136	-	254,180	233,011	-	889,568	941,527	-	686,344	650,759



## RETABULATION OF THE NAVY ESTIMATES. DIVISION I.—NAVAL YARDS. — DETAILS of pages 216 and 217.

TEMPERANCE		HAULBOWLINE		TOTAL OF HOME YARDS.		NAVAL YARDS ABROAD.		TOTAL OF YARDS AT HOME AND ABROAD.		OTHER THAN YARDS (i.e., Contract Ships, and Sums not chargeable to any Yard, or which cannot now be apportioned).		TOTAL, DIVISION I. NAVAL YARDS.		Sub-Head Reference Letter.		Vote.	
Page.	1877-78.	1876-77.	Page.	1877-78.	1876-77.	Page.	1877-78.	1876-77.	Page.	1877-78.	1876-77.	Page.	1877-78.	1876-77.	Home.	Abroad.	Vote.
	£.	£.		£.	£.		£.	£.		£.	£.		£.	£.			
232	10,586	10,265	-	-	-	232	100,975	105,734	232	40,876	30,982	232	150,851	145,716	A.	K.	6
	10	10	-	-	-	"	3,011	3,094	"	701	741	"	4,012	4,435	B.	L.	
	850	1,080	-	-	-	"	7,250	7,730	"	480	480	"	7,730	8,110	C.	M.	
	629	594	-	-	-	"	4,300	4,300	"	1,110	1,630	"	5,470	5,330	D.	N.	
	94,224	94,155	232	750	750	"	1,014,829	1,015,947	"	67,170	56,364	"	1,081,999	1,072,311	E.	O.	
233	888	940	-	-	-	233	28,444	20,047	233	7,378	7,220	233	35,722	36,376	F.	P.	
	975	975	-	-	-	"	10,284	8,834	"	723	723	"	11,007	10,997	G.	Q.	10
	2,210	2,210	233	506	80	"	31,486	28,181	"	10,173	10,244	"	41,659	38,425	H.	R.	
	15	20	"	60	80	"	250	300	"	2,380	3,250	"	2,030	3,550	I.	S.	
	110,387	110,255	"	1,325	919	"	1,210,789	1,203,657	"	130,891	120,093	"	1,341,680	1,323,750			
			"			"			"			"					
194	12,300	12,400	194	400	400	194	138,700	143,400	194	138,700	143,400	194	138,700	143,400	A.	-	10
	57,400	94,500	"	600	600	"	464,000	508,500	"	464,000	508,500	"	464,000	508,500	B.	-	
"	6,000	8,000	"	500	1,400	"	109,000	168,500	"	109,000	168,500	"	109,000	168,500	C.	-	
"	400	200	"	000	800	"	149,000	123,000	"	149,000	123,000	"	149,000	123,000	D.	-	
"	3,500	4,330	"	1,000	1,000	"	176,000	172,830	"	176,000	172,830	"	176,000	172,830	E.	-	
	100	100	"	50	100	"	10,000	10,000	"	55,000	45,000	194	115,000	100,000	F.	-	
	79,700	119,620	"	3,150	4,300	"	1,047,300	1,126,320	194	15,000	35,000	"	1,092,300	1,161,320	G.	-	10
			"			"			"			"					
104	117,430	113,458	-	-	-	104	331,030	257,029	104	331,030	257,029	104	156,213	490,455	A.	-	
	-	-	-	-	-	-	-	-	-	-	-	-	302,517	304,295	B.	-	
	-	-	-	-	-	194	2,500	2,000	194	2,500	2,000	"	7,100	5,500	C.	-	
	-	-	-	-	-	-	-	-	-	-	-	"	12,550	8,000	D.	-	
	-	-	-	-	-	-	-	-	-	-	-	"	65,000	33,000	E.	-	
	-	-	-	-	-	-	-	-	-	-	-	"	96,000	30,000	F.	-	
104	10,300	-	-	-	-	194	65,100	55,000	104	65,100	55,000	"	14,000	17,000	G.	-	11
	-	-	-	-	-	-	6,000	8,000	"	6,000	8,000	"	80,000	-	H.	-	
	-	-	-	-	-	-	-	-	194	80,000	-	"	-	-	I.	-	
	-	-	-	-	-	-	404,620	305,145	194	404,620	305,145	"	637,380	1,048,455			
	-	-	-	-	-	-	330,620	-	194	330,620	-	"	711,380	-			
104	127,730	113,458	-	-	-	194	330,620	305,145	194	330,620	305,145	"	1,042,000	1,353,600			
			-	-	-	-			-			-					11
112	7,780	8,570	112	26,570	31,040	-	273,880	301,020	121	38,105	59,200	-	332,075	354,310	A.	P.	
"	7,708	8,820	-	-	-	-	72,865	79,819	-	10,474	10,167	-	83,339	89,986			
"	15,548	17,300	112	20,570	31,040	112	346,745	380,839	119	415,414	444,296	-	415,414	444,296			
	-	-	-	-	-	-	1,700	2,400	-	1,700	2,400	-	1,700	2,400			
	500	500	-	-	-	-	4,500	4,500	-	5,000	3,000	-	417,114	446,096			
	300	500	-	-	-	-	2,000	2,000	120	3,250	3,000	-	5,000	5,000			
	450	450	-	1,450	1,450	-	6,000	6,000	-	7,700	7,750	-	3,250	3,000			16
	16,798	18,640	-	28,020	32,490	-	362,535	397,289	-	70,619	65,157	-	7,700	7,750			
	-	-	-	-	-	-	-	-	-	-	-	-	433,154	462,446			
	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	-	-	-	-	-	-	3,035,244	-	-	3,271,754	-	-	163,931	161,201			
	334,615	361,973	-	32,495	37,709	-	3,035,244	3,032,411	-	246,510	220,250	-	916,311	1,309,656			
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\* Included under Deptford Store Yard and Sub-Head F.

† Sub-Heads F. and G. amalgamated in 1876-7, and entitled Sub-Head F.



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**DIVISION 2.**

**VICTUALLING.**

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RETABULATION of the NAVY ESTIMATES.

DIVISION 2.—VICTUALLING.					SUB-DIVISIONS OF DIVISION 2.					
Number of Vote.	TITLE OF VOTE.	Page.	Required to be Voted for the Service of the Year 1877-78.	Last Vote for the Financial Year 1876-77.	DEPTFORD.			GOSPORT.		
					Page.	1877-78.	1876-77.	Page.	1877-78.	1876-77.
2	VICTUALS AND CLOTHING FOR SEA-MEN AND MARINES.	213	£. 1,080,385	£. 1,055,138	228	£. 473,148	£. 612,439	228	£. 91,254	£. 87,689
7	VICTUALLING YARDS AT HOME AND ABROAD.	"	76,930	76,400	"	34,165	34,203	"	13,066	12,983
11	NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS.	"	15,990	19,388	"	3,535	9,328	"	4,135	2,975
	TOTAL, EFFECTIVE SERVICE - -	"	1,173,305	1,150,926	"	510,848	655,970	"	108,455	103,647
16 Sect. II.	CIVIL PENSIONS AND ALLOWANCES -	"	11,179	11,264	-	-	-	-	-	-
	GRAND TOTAL, DIVISION 2 - £.	"	1,184,484	1,162,190	228	510,848	655,970	228	108,455	103,647
DEPTFORD - - - - -						510,848	655,970			
GOSPORT - - - - -						108,455	103,647	108,455	103,647	
PLYMOUTH - - - - -						83,370	87,214	-	-	-
HAULBOWLINE - - - - -						15,671	17,117	-	-	-
YARDS ABROAD - - - - -						118,695	126,333	-	-	-
OTHER THAN YARDS - - - - -						670,473	601,688	-	-	-
GROSS TOTAL - - - - -						1,507,512	1,591,969	-	-	-
REPAYMENTS, &c. - - - - -						323,028	429,779	-	-	-
NET TOTAL - - - £.						1,184,484	1,162,190	-	-	-



## SUB-DIVISIONS OF DIVISION 2.

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**DIVISION 2.**

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**V I C T U A L L I N G.**

(DETAILS OF PAGES 224 and 225.)

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# RETABULATION of the NAVY ESTIMATES.—DIVISION 2.—VICTUALLING (DETAILS of pages 224 and 225)

DIVISION 2—VICTUALLING.			SUB-DIVISIONS OF DIVISION 2.								
Number of Vote.	Sub-Head Reference Letter.	TITLE OF SUB-HEAD OF VOTE.	DEPTFORD.			GOSPORT.			PLYMOUTH.		
			Page.	1877-78.	1876-77.	Page.	1877-78.	1876-77.	Page.	1877-78.	1876-77.
2		<b>Vote 2.—Victuals and Clothing for Seamen and Marines:</b>		£.	£.		£.	£.		£.	£.
	A.	Provisions received under Contract, &c. - - - - -		214,980	312,477		71,120	68,267		49,437	56,278
	B.	Savings (Payments for Provisions not taken up) - - - - -		—	—		—	—		—	—
	C.	Allowances in lieu of Provisions and Fuel to Officers and Men borne on Ships' Books and not Victualled - - - - -		—	—		—	—		—	—
	D.	Lights for Service Afloat - - - - -		36,860	39,416		488	27		94	—
	E.	Allowances in lieu of Lights to Officers, &c. Afloat - - - - -		—	—		—	—		—	—
	F.	For Mess Traps, and Contributions in aid of Mess - - - - -		1,764	2,538		3,462	3,524		1,544	2,740
	G.	Victualling Stores received under Contract, &c. - - - - -		35,629	60,224		6,820	5,022		2,973	3,204
	H.	Freight, Lighterage, and other Charges on Provisions and Victualling Stores - - - - -		331	525		20	424		186	241
	I.	Seamen's Clothing, Soap, and Tobacco - - - - -		183,575	197,259		9,344	9,825		13,369	10,200
		<b>Total, Vote 2 - - -</b>		473,148	612,439		91,254	87,689		67,595	72,663
7		<b>Vote 7.—Victualling Yards at Home and Abroad:</b>									
	A. H.	Salaries and Allowances - - - - -	80	8,225	8,261	80	2,621	2,580	80	3,026	2,635
	B. I.	Rents, Water, &c. - - - - -	"	360	560	"	2	2	"	254	214
	C. K.	Gas - - - - -	"	700	700	"	250	250	"	120	120
	D. L.	Contingencies - - - - -	"	265	195	"	114	104	"	220	206
	E. M.	Wages to Artificers, &c. (excluding Vote 11) - - - - -	81	120,042	120,117	81	6,564	6,329	81	5,975	5,890
	F. -	Wages, &c., Victualling Yard Hoys - - - - -	"	2,359	2,351	"	2,140	2,138	"	1,683	1,684
	G. -	Wages, Police Force - - - - -	"	2,214	2,219	"	1,375	1,380	"	1,375	1,380
	- N.	Extra Pay to Artificers, &c. of the Fleet - - - - -	"	—	—	"	—	—	"	—	—
		<b>Total, Vote 7 - - -</b>	81	34,165	34,203	81	13,066	12,983	81	12,655	12,516
11		<b>Vote 11.—New Works, &amp;c. (Victualling Yards only):</b>									
	1. Q.	Buildings - - - - -	113	1,980	4,600	113	3,400	2,240	114	940	900
		Machinery - - - - -	"	1,155	4,238	"	433	435	"	1,850	755
		<b>TOTAL - - -</b>	"	3,135	8,928	"	3,833	2,675	"	2,820	1,730
	S. -	Contingencies - - - - -	"	400	400	"	300	300	"	300	300
	T. -	Temporary Superintendence of Engineering and Architectural Works - - - - -	"	—	—	"	—	—	"	—	—
		<b>Total, Vote 11 - - -</b>	"	3,535	9,328	"	4,135	2,975	"	3,120	2,035
16		<b>Vote 16.—Section 2.—Civil Pensions and Allowances</b>		—	—		—	—		—	—
Sec. 2.		<b>TOTAL—Division 2.—Victualling - - - £.</b>		510,848	655,970		108,455	103,647		83,370	87,214

Note.—The Amounts estimated for the several Yards under Vote 2 are not given in the Estimates, and, as shown here, are based on the payments made and repayments received in previous years.  
 † Excluding Labour at Deptford (380 l. for 1876-77, and 450 l. for 1877-78) in making and repairing Yard Machinery, chargeable to and provided for under Vote 11, "New Works, &c."







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EXPLANATORY STATEMENT of DETAILS as to VOTE 6, showing how the NET AMOUNTS posted into the RETABULATION of the NAVY ESTIMATES (DIVISION 1, NAVAL YARDS), at pages 220 and 221, are obtained. See also pages 64 and 65 in the body of the Estimates.

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## EXPLANATORY STATEMENT of Details as to Vote 6, showing how the NET AMOUNTS posted into the RECAPITULATION of the NAVY ESTIMATES, 1876-77.

Y A R D.	A.		B.		C.		D.		E.											
	Salaries and Allowances.		Rents, Water, &c.		Gas.		Contingencies.		W A G E S.											
	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.	Established. Mechanic Writers em- ployed under Professional Officers, marked 1.)		Hired, including Steam Factory.		Artificers, &c. of the Fleet.		GROSS TOTAL. Mechanic Writers em- ployed under Professional Officers, marked 1.)		Abate Labour (Charged to Vote 11 (Machinery).		NET TOTAL. Mechanic Writers employed under Profes- sional Officers, marked 1.)	
	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.
AT HOME.																				
DEPTFORD - - -	1,706	1,671	-	-	-	-	64	64	8,883	3,707	1,472	1,450	-	-	5,355	5,225	330	-	5,025	4,935
CHATHAM - - -	21,840	20,434	385	164	1,000	1,300	777	802	113,163	1,082	100,975	-	-	-	220,138	219,472	9,549	7,230	210,589	212,242
SHEERNESS - - -	16,985	16,855	1	1	1,000	1,050	545	545	68,607	694	42,178	-	-	-	110,845	110,522	2,773	3,990	108,072	107,532
PORTSMOUTH - - -	28,037	26,254	2,404	2,467	2,700	2,500	1,177	1,177	102,586	3,067	162,258	-	-	-	324,844	324,180	7,519	6,269	317,023	317,910
DEVONPORT - - -	30,148	29,606	1,046	1,047	1,700	1,700	961	911	145,240	560	137,323	-	-	-	282,563	280,754	11,913	7,546	271,650	273,300
YEMBRIDGE - - -	10,586	10,205	10	10	850	1,080	629	594	50,927	-	40,165	-	-	-	97,092	97,017	2,866	2,862	94,224	94,155
HAULBOWLINE - - -	-	-	-	-	-	-	-	-	-	-	750	750	-	-	750	750	-	-	750	750
TOTAL OF YARDS at HOME - - -	£. 100,975	105,734	3,911	3,694	7,250	7,630	4,360	4,300	557,850	-	401,203	-	-	-	1,049,062	1,045,342	32,233	29,595	1,016,829	1,014,747
ABROAD.																				
GIBRALTAR - - -	2,187	2,146	471	511	120	120	100	60	757	172	3,004	3,550	322	-	4,683	3,722	392	88	4,291	3,810
MALTA - - -	10,200	9,081	-	-	280	280	240	240	4,000	3,724	22,755	14,402	-	-	26,764	18,166	1,111	750	25,675	17,916
HALIFAX - - -	1,916	1,806	180	180	80	80	72	62	1,140	1,124	1,551	1,488	204	204	2,855	2,906	52	35	2,803	2,871
BERMUDA - - -	5,921	5,947	10	10	-	-	147	147	4,325	4,360	6,381	6,202	1,063	1,808	12,614	12,450	77	1,076	11,844	11,374
ANTIGUA - - -	168	359	-	-	-	-	59	50	176	170	208	208	-	-	384	384	-	-	384	384
JAMAICA - - -	1,218	1,335	-	-	-	-	41	41	1,661	1,011	2,112	2,604	-	-	3,173	3,155	30	25	3,143	3,130
ASCENSION - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PORT SAID - - -	-	-	-	-	-	-	-	-	-	-	180	180	-	-	180	180	-	-	180	180
SIERRA LEONE - - -	-	-	-	-	-	-	-	-	-	-	55	55	-	-	55	55	-	-	55	55
FERNANDO Po - - -	150	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CAPE OF GOOD HOPE - - -	3,018	3,470	-	-	-	-	173	138	601	600	1,326	1,314	2,051	2,108	4,028	4,082	75	75	3,953	4,007
TRINCOMALEE - - -	1,738	1,708	-	-	-	-	85	82	827	324	2,037	450	-	-	2,564	789	-	-	2,564	789
SINGAPORE - - -	100	100	-	-	-	-	-	-	-	-	50	50	-	-	50	50	-	-	50	50
HONG KONG - - -	10,070	10,883	-	-	-	-	112	112	420	420	7,328	7,311	2,474	2,412	10,222	10,143	26	26	9,996	9,917
ESQUIMALT - - -	223	196	-	-	-	-	-	-	508	580	182	212	67	-	847	792	6	65	787	727
SHANGHAI - - -	584	506	40	40	-	-	50	60	-	-	880	916	291	290	1,171	1,206	-	-	1,171	1,206
SYDNEY - - -	1,477	1,554	-	-	-	-	38	38	118	118	125	125	189	189	432	432	-	-	432	432
TOTAL OF YARDS ABROAD - - -	£. 40,870	39,082	701	741	480	480	1,110	1,030	13,817	12,934	48,765	38,565	7,591	7,191	70,161	58,700	1,400	1,400	68,761	57,300
TOTAL OF YARDS at HOME and ABROAD - - -	£. 150,851	145,716	4,612	4,435	7,730	8,110	5,470	5,330	571,667	-	550,068	-	-	-	1,119,223	1,104,042	33,633	31,000	1,085,554	1,072,047

Including labour (1,400 £. for 1876-77, and for 1877-78) on machinery for the Royal Victoria Yard, provided for here, the work being performed by Sheerness artificers.



ARDS), at pages 220 and 221, are obtained. See also pages 64 and 65, in the body of the Estimates.

F.		G.		H.		I.		Required for the Service of the Year 1877-78.	Last Vote for the Financial Year 1876-77.	Y A R D.
Wages, &c., Yard Service Afloat.		Hire of Teams.		Wages, &c., Police Force.		Extra Pay to Artificers, &c. of the Fleet, Dockyards at Home and Naval Yards Abroad.				
1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.	1877-78.	1876-77.			
£. 70	£. 70	£. —	£. —	£. 265	£. 265	£. —	£. —	£. 7,130	£. 7,296	AT HOME. DEPTFORD.
3,500	3,560	2,667	1,766	7,384	7,396	35	35	250,192	249,696	CHATHAM.
5,555	5,656	1,459	1,459	2,796	2,804	10	5	137,117	136,101	SHEERNESS.
8,483	8,914	2,660	2,660	10,998	8,077	50 10	80 5	377,561 959	372,026 866	PORTSMOUTH. Portland.
9,948	9,901	2,523	1,964	7,327	7,349	70	75	326,118	326,498	DEVONPORT.
888	946	975	975	2,210	2,210	15	20	110,387	110,255	PEMBROKE.
—	—	—	—	506	80	60	80	1,325	919	HAULBOWLINE.
28,444	29,047	10,284	8,824	31,486	28,181	250	300	1,210,789	1,203,657	TOTAL of YARDS at HOME.

P.		Q.		R.		S.				ABROAD.
493	493	—	—	514	367	130	130	8,396	7,461	GIBRALTAR.
1,572	1,582	—	—	3,231	3,326	30	30	41,224	32,794	MALTA.
961	960	177	177	497	497	250	1,030	7,016	7,743	HALIFAX.
2,361	2,298	378	428	1,010	1,010	450	450	22,121	21,664	BERMUDA.
—	—	—	—	46	46	—	—	650	830	ANTIGUA.
486	486	30	30	1,009	1,009	450	450	6,377	6,481	JAMAICA.
—	—	—	—	—	—	—	—	—	—	ASCENSION.
—	—	—	—	—	—	—	—	180	180	PORT SAID.
—	—	—	—	—	—	—	—	55	55	SIERRA LEONE.
—	—	—	—	—	—	5	—	155	150	FERNANDO Po.
674	666	138	138	241	241	500	500	9,607	9,160	CAPE OF GOOD HOPE.
—	—	—	—	307	300	70	70	4,564	2,943	TRINCOMALEE.
—	—	—	—	—	—	5	—	161	159	SINGAPORE.
731	744	—	—	3,318	3,448	100	100	25,193	25,164	HONG KONG.
—	—	—	—	—	—	250	300	1,260	1,223	ESQUIMALT.
—	—	—	—	—	—	40	40	1,885	1,912	SHANGHAI.
—	—	—	—	—	—	100	150	2,047	2,174	SYDNEY.
7,278	7,229	723	773	10,173	10,244	2,380	3,250	130,891	120,093	TOTAL of YARDS ABROAD.
35,722	36,276	11,007	9,597	41,659	38,425	2,630	3,550	1,341,680	1,323,750	TOTAL of YARDS at HOME and ABROAD.



N A V Y.

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1875-76.

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SUPPLEMENTARY ESTIMATE.

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STATEMENT  
OF  
EXCESS OF EXPENDITURE  
FOR

N A V Y SERVICES,

FOR THE YEAR 1875-76.

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SUM required to be Voted in order to defray the Excess of Expenditure beyond the Ordinary and Supplementary Navy Grants, as shown in the Appropriation Account for the Navy, for the Year ended 31st March 1876	£. s. d.		
	75,511	2	3

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Seventy-five Thousand Five Hundred and Eleven Pounds  
Two Shillings and Three-pence.

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GEORGE WARD HUNT.

H. R. YELVERTON.

Admiralty, }  
March 1877. }

ALGERNON EGERTON,  
Secretary.

N A V Y.

1875-76.

SUPPLEMENTARY ESTIMATE.

STATEMENT

OF

EXCESS OF EXPENDITURE

FOR NAVY SERVICES,

FOR THE YEAR 1875-76.

(Presented by Her Majesty's Command.)

Ordered, by The House of Commons, to be Printed,  
8 March 1877.



NAVY.

SUPPLEMENTARY ESTIMATE

OF

HER MAJESTY'S NAVY,

FOR THE YEAR 1876-77.

AN ESTIMATE of the Sum required to defray the Charges which shall come in course of Payment in the Year ending the 31st March 1877, under the following Head of the Annual Estimates; viz. :—

VOTE 14.

MISCELLANEOUS SERVICES.

Sub-head Z Z. Repayment to the Indian Government for the use of Her Majesty's Indian Troop Ship "Serapis."

For depreciation of "Serapis" during the Period of Employment  
in connection with the Visit of His Royal Highness the Prince  
of Wales to India . . . . . £. 8,000.

The whole Charge amounts to the Sum of Eight Thousand Pounds.

GEORGE WARD HUNT. : H. R. YELVERTON.

Admiralty, }  
13 March 1877.

ALGERNON EGERTON,  
Secretary.

N A V Y.

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SUPPLEMENTARY ESTIMATE

OF

HER MAJESTY'S NAVY,

FOR THE YEAR 1876-77.

AN ESTIMATE of the Sum required to defray the Charges which shall come in course of Payment in the Year ending the 31st March 1877, under the following Head of the Annual Estimates, viz:—

VOTE 14.

MISCELLANEOUS SERVICES.

(Presented by Her Majesty's Command.)

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*Ordered, by The House of Commons, to be Printed.*  
13 March 1877.

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236  
NAVY ESTIMATES, 1877-78.

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AMENDED PREFATORY STATEMENT

AND

ABSTRACT SHEET.

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STATEMENT showing the Net Cost of the SERVICES provided for in the  
NAVY ESTIMATES for the Financial Years 1875-76, 1876-77, and 1877-78.  
ESTIMATE of the SUMS required to meet the EXPENSES which may be  
incurred in the NAVAL DEPARTMENT in the Year 1877-78, showing the  
Increase and Decrease, as compared with the Sums Voted for the preceding  
Year.

(PRESENTED TO PARLIAMENT BY HER MAJESTY'S COMMAND.)

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*Ordered, by The House of Commons, to be Printed,*  
11 August 1877.

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STATEMENT showing the NET COST of the SERVICES provided for in the NAVY ESTIMATES for the Financial Years 1875-76, 1876-77, and 1877-78, after taking into account the EXTRA RECEIPTS of the NAVAL DEPARTMENT payable into the EXCHEQUER.

(Prefixed to the NAVY ESTIMATES in accordance with Treasury Minute of 12th December 1863.)

1875-76 :		£.	s.	d.
Navy Estimates, 1875-76	- - - - -	10,825,194	-	-
Add,—				
Excess of Deficits over Surpluses on the Ordinary Grants -	- }	75,511	2	3
(Deficits, 158,472 l. 18 s. 11 d.; Surpluses, 82,961 l. 16 s. 8 d.) -	- }			
Abate,—		10,900,705	2	3
Extra Receipts and Repayments, as per Statement shown at page 208 of these Estimates (1st April 1875 to 31st March 1876)		397,197	17	8
Net Amount of Expenditure for Naval Services for the Year 1875-76, after deducting Extra Receipts and Repayments paid into the Exchequer - - - - -	} £.	10,503,507	4	7
<hr/>				
1876-77 :				
Navy Estimates, 1876-77	- - - - -	*11,296,872	-	-
Abate,—				
Extra Receipts and Repayments :	£.			
1st April 1876 to 31st December 1876	- 113,965			
1st January 1877 to 31st March 1877 (Estimated)	- 45,000			
Amount to be contributed by the Indian Government on account of the expense of the Fleet on the India Station (including one quarter estimated)	- 65,064			
		224,029	-	-
Net Amount, after deducting Estimated Extra Receipts and Repayments paid, or to be paid, into the Exchequer - - - - -	} £.	*11,072,843	-	-
<hr/>				
1877-78 :				
Navy Estimates, 1877-78	- - - - -	†10,971,829	-	-
Abate,—				
Estimated Amount of Extra Receipts and Repayments	- £. 147,000			
Amount to be contributed by the Indian Government on account of the expense of the Fleet on the India Station	- 70,000			
		217,000	-	-
Net Amount, after deducting Estimated Extra Receipts and Repayments to be paid into the Exchequer - - - - -	} £.	†10,754,829	-	-

Admiralty, }  
10 August 1877. }

H. WALKER,  
Accountant General of the Navy, and  
Comptroller of Navy Pay.

\* Including Supplementary Estimate, 8,000 l., for depreciation of "Serapis," Prince of Wales' Visit to India. Parliamentary Paper, 13 March 1877, No. 101.

† After abating 8,000 l. under Vote No. 11, Subhead O., towards erection of a College for Naval Cadets.

ESTIMATE of the Sums required to meet the Expenses which may be  
Increase and Decrease, as compared with the Sums Voted

Number of Vote.	Page.	A B S T R A C T.
1	6	WAGES to Seamen and Marines - - - - -
2	11	VICTUALS and CLOTHING for ditto - - - - -
3	14	ADMIRALTY OFFICE - - - - -
4	20	COAST GUARD SERVICE, ROYAL NAVAL RESERVE, &c. - - - - -
5	23	SCIENTIFIC BRANCH - - - - -
6	31	DOCKYARDS and NAVAL YARDS AT HOME and ABROAD - - - - -
7	66	VICTUALLING YARDS AT HOME and ABROAD - - - - -
8	82	MEDICAL ESTABLISHMENTS AT HOME and ABROAD - - - - -
9	100	MARINE DIVISIONS - - - - -
10 Sec. I.	106	NAVAL STORES for the Building, Repair, and Outfit of the Fleet and Coast Guard, Steam Machinery and Ships built by Contract:
Sec. II.		Section I. Naval Stores - - - - -
		Section II. Steam Machinery and Ships built by Contract - - - - -
11	109	NEW WORKS, Buildings, Machinery, and Repairs - - - - -
12	122	MEDICINES and Medical Stores - - - - -
13	124	MARTIAL LAW and LAW CHARGES - - - - -
14	126	MISCELLANEOUS SERVICES - - - - -
		TOTAL for the EFFECTIVE SERVICE - - - £.
15	130	HALF PAY, Reserved Half Pay, and Retired Pay to Officers of the Navy and Royal Marines - - - - -
16 Sec. I.	131	MILITARY and CIVIL PENSIONS and ALLOWANCES:
Sec. II.		Section I. Military Pensions and Allowances - - - - -
		Section II. Civil Pensions and Allowances - - - - -
		TOTAL FOR THE NAVAL SERVICE - - - £.
		FOR THE SERVICE OF OTHER DEPARTMENTS OF GOVERNMENT:
17	143	ARMY DEPARTMENT (Conveyance of Troops) - - - - -
		GRAND TOTAL - - - £.

incurred in the NAVAL DEPARTMENT in the Year 1877-78, showing the for the preceding Year, under the following Heads; viz.:

REQUIRED to be Voted for the Service of the Year 1877-78.	LAST VOTE for the Financial Year 1876-77.	1877-78.		EXPENDITURE in 1875-76.	Number of Vote.
		Increase.	Decrease.		
£.	£.	£.	£.	£. s. d.	
2,684,048	2,634,904	49,144	—	2,609,855 19 2	1
1,178,610	1,153,867	25,248	—	1,142,670 16 8	2
193,890	189,820	4,070	—	187,809 4 4	3
207,900	210,230	—	2,330	185,602 16 8	4
109,002	109,194	—	192	107,262 — 7	5
1,341,680	1,323,750	17,930	—	1,356,368 11 2	6
76,930	76,400	530	—	74,339 1 7	7
66,150	65,830	320	—	65,193 15 3	8
21,316	20,053	1,263	—	18,204 — 7	9
1,207,300	1,261,320	—	54,020	1,270,048 9 2	10 Sec. I.
1,042,000	1,853,600	—	311,600	913,675 2 5	11 Sec. II.
* 537,715	569,249	—	31,534	625,086 19 3	12
78,010	76,230	1,780	—	74,746 4 8	13
8,147	15,114	—	6,967	15,815 13 2	14
130,134	† 143,547	—	13,413	203,530 10 1	15
* 8,882,832	† 9,202,608	100,280	420,056	8,850,209 4 9	16 Sec. I.
880,796	888,472	—	7,676	881,171 6 —	17 Sec. II.
759,940	726,136	33,804	—	703,855 7 10	18
279,981	282,176	—	2,195	284,423 17 2	19
* 10,803,549	† 11,099,392	134,084	429,927	10,719,659 15 9	20
168,280	197,480	—	29,200	178,364 18 2	21
* 10,971,829	† 11,296,872	134,084	459,127	10,898,024 13 11	22
NET DECREASE - - - £. 325,043				2,680 8 4	Balances Irrecoverable.
£.				10,900,705 2 3	

H. R. YELVERTON.

A. W. A. HOOD.

GILFORD.

MASSEY LOPES.

Admiralty, }  
10 August 1877.

ALGERNON EGERTON,  
Secretary.

\* After abating 8,000 £. under Vote No. 11, Subhead O., towards erection of a College for Naval Cadets.

† Including Supplementary Estimate, 8,000 £., for depreciation of "Serapis," Prince of Wales' Visit to India. Parliamentary Paper, March 1877, No. 101.

NAVY ESTIMATES, 1877-78.

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AMENDED PREFATORY STATEMENT  
AND  
ABSTRACT SHEET.

---

STATEMENT showing the Net Cost of the Services provided for in the NAVY ESTIMATES for the Financial Years 1875-76, 1876-77, and 1877-78.

ESTIMATE of the Sums required to meet the Expenses which may be incurred in the NAVAL DEPARTMENT in the Year 1877-78, showing the Increase and Decrease, as compared with the Sums Voted for the preceding Year.

(Presented to Parliament by Her Majesty's Command.)

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Ordered, by The House of Commons, to be Printed,  
11 August 1877.

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N A V Y.

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APPROPRIATION ACCOUNT.

1875-76.

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APPROPRIATION ACCOUNT of the SUMS Granted by Parliament for NAVY SERVICES, for the Year ended 31st March 1876, together with the REPORT of the COMPTROLLER AND AUDITOR GENERAL thereon.

ALSO,

STATEMENT of the SURPLUSES and DEFICITS upon the GRANTS for NAVY SERVICES for the Year ended 31st March 1876, showing all Cases in which the Navy Department has obtained the Sanction of the Treasury to Expenditure not provided for in the Grants for that Year, together with Copies of the Representations made to the Treasury by the Board of Admiralty; also the Balance Sheet showing the Ledger Balances on the 30th September 1876, the Date on which the Account of Naval Receipt and Expenditure for the Year 1875-76 was closed.

(PRESENTED PURSUANT TO ACT 38 & 39 VICT. c. 78, s. 4.)

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*Ordered, by The House of Commons, to be Printed,*  
*15 February 1877.*

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## ABSTRACT ACCOUNT of the SUM Expended, compared with the SUM Granted, for NAVAL

No. of Vote.	SERVICE.	GRANT (including Supplementary Estimates).	A. TOTAL EXPENDITURE.
	NAVY EFFECTIVE SERVICES:	£. s. d.	£. s. d.
1	Wages to Seamen and Marines - - - - -	2,636,162 - -	} 2,609,929 15 2
	Supplementary Estimates - - - - -	7,900 - -	
2	Victuals and Clothing for ditto - - - - -	1,106,581 - -	} 1,142,876 16 6
	Supplementary Estimate - - - - -	1,200 - -	
3	Admiralty Office - - - - -	183,916 - -	187,809 4 4
4	Coast Guard Service, Royal Naval Reserve, &c. - - - - -	188,505 - -	185,602 16 8
5	Scientific Branch - - - - -	107,324 - -	107,262 - 7
6	Dockyards and Naval Yards at Home and Abroad - - - - -	1,322,069 - -	} 1,356,368 11 2
	Supplementary Estimate - - - - -	4,580 - -	
7	Victualling Yards at Home and Abroad - - - - -	75,548 - -	74,339 1 7
8	Medical Establishments at Home and Abroad - - - - -	64,644 - -	65,193 15 3
9	Marine Divisions - - - - -	18,868 - -	18,204 - 7
10	Section I. Naval Stores, &c. - - - - -	1,261,000 - -	} 1,270,048 9 2
	Supplementary Estimate - - - - -	24,770 - -	
	Section II. Steam Machinery, and Ships built by Contract - - - - -	902,608 - -	} 913,675 2 5
	Supplementary Estimate - - - - -	1,000 - -	
11	New Works, Buildings, Machinery, and Repairs - - - - -	644,751 - -	625,086 19 3
12	Medicines and Medical Stores - - - - -	73,330 - -	} 74,750 6 8
	Supplementary Estimate - - - - -	200 - -	
13	Martial Law and Law Charges - - - - -	15,904 - -	15,815 13 2
14	Miscellaneous Services - - - - -	148,823 - -	} 203,530 10 1
	Supplementary Estimate - - - - -	7,600 - -	
	TOTAL for the EFFECTIVE SERVICE - - - £.	8,797,283 - -	8,850,493 2 7
	NAVY NON-EFFECTIVE SERVICES:		
15	Half Pay, &c. - - - - -	888,211 - -	} 881,171 6 -
	Supplementary Estimate - - - - -	1,300 - -	
16	Section I. Military Pensions and Allowances - - - - -	681,781 - -	709,855 7 10
	Section II. Civil Pensions and Allowances - - - - -	284,529 - -	284,423 17 2
	TOTAL for the NAVAL SERVICE - - - £.	10,653,104 - -	10,719,943 13 7
	FOR THE SERVICE OF OTHER DEPARTMENTS OF GOVERNMENT:		
17	Army Department (Conveyance of Troops) - - - - -	172,090 - -	181,299 14 7
	GRAND TOTAL - - - £.	10,825,194 - -	10,901,243 8 2
	Amount written off as Irrecoverable - - - - -	- - -	2,680 8 4
	£.	10,825,194 - -	10,903,923 16 6
	To be advanced out of a Vote of Credit for the Ashantee Expedition, authorised by Treasury Letter of 30 December 1876 - - - - -	3,218 14 3	
	£.	10,828,412 14 3	10,903,923 16 6
			10,828,412 14 3
	Excess of Expenditure beyond the ordinary Navy Grants for the Year 1875-76, to be provided for - - £.		75,511 2 3

Estimated Amount of Extra Receipts payable to Exchequer - - - - - £. s. d.  
 Amount of Extra Receipts realised in the year 1875-76, and paid over to Exchequer - 397,197 17 8

Admiralty,  
 30 December 1876.

I certify that this Account has been examined by Officers under my directions in accordance with, and to the extent prescribed  
 Expenditure for Navy Services, for

Examined,  
 I. A. Hawker.

SERVICES, in the Year ended 31st March 1876; prepared in pursuance of Act 29 &amp; 30 Vict. c. 39, s. 22.

Amount included in Column A. on account of Expenditure for Ashantee Expedition.	B. NET EXPENDITURE.	SURPLUS.	DEFICIT.	SURPLUS.	DEFICIT.
		As compared with Net Expenditure, Column B.		As compared with Total Expenditure, Column A.	
£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
73 16 -	2,609,855 19 2	34,206 - 10	- - -	34,132 4 10	-
205 19 10	1,142,670 16 8	- - -	34,889 16 8	- - -	35,095 16 8
- - -	187,809 4 4	- - -	3,893 4 4	- - -	3,893 4 4
- - -	185,602 16 8	2,902 3 4	- - -	2,902 3 4	-
- - -	107,262 - 7	61 19 5	- - -	61 19 5	-
- - -	1,356,368 11 2	- - -	29,719 11 2	- - -	29,719 11 2
- - -	74,339 1 7	1,208 18 5	- - -	1,208 18 5	-
- - -	65,193 15 3	- - -	549 15 3	- - -	549 15 3
- - -	18,204 - 7	663 19 5	- - -	663 19 5	-
- - -	1,270,048 9 2	15,721 10 10	- - -	15,721 10 10	-
- - -	913,675 2 5	- - -	10,067 2 5	- - -	10,067 2 5
- - -	625,086 19 3	19,664 - 9	- - -	19,664 - 9	-
4 2 -	74,746 4 8	- - -	1,216 4 8	- - -	1,220 6 8
- - -	15,815 13 2	88 6 10	- - -	88 6 10	-
- - -	203,530 10 1	- - -	47,107 10 1	- - -	47,107 10 1
283 17 10	8,850,209 4 9	74,516 19 10	127,443 4 7	74,443 3 10	127,653 6 5
- - -	881,171 6 -	8,339 14 -	- - -	8,339 14 -	-
- - -	703,855 7 10	- - -	22,074 7 10	- - -	22,074 7 10
- - -	284,423 17 2	105 2 10	- - -	105 2 10	-
283 17 10	10,719,659 15 9	82,961 16 8	149,517 12 5	82,888 - 8	149,727 14 3
2,934 16 5	178,364 18 2	- - -	6,274 18 2	- - -	9,209 14 7
3,218 14 3	10,898,024 13 11	82,961 16 8	155,792 10 7	82,888 - 8	158,937 8 10
- - -	2,680 8 4	- - -	2,680 8 4	- - -	2,680 8 4
3,218 14 3	10,900,705 2 3	82,961 16 8	158,472 18 11	82,888 - 8	161,617 17 2
		£.75,511. 2. 3.		£.78,729. 16. 6.	
		Net Deficit on ordinary Grants, exclusive of Ashantee Expedition.		Net Deficit on ordinary Grants, inclusive of Ashantee Expedition.	
3,218 14 3	10,900,705 2 3				

*H. Walker,*  
Accountant General of the Navy, and  
Comptroller of Navy Pay.

by, the Act 29 & 30 Vict. c. 39; and that the above is a correct statement as an Appropriation Account of the Receipt and the year ended 31 March 1876.

*Wm. Dunbar,*  
Comptroller General of Her Majesty's Exchequer,  
and Auditor General of Public Accounts.

NOTE—affording explanations of the degree to which the Account of Naval Receipt and Expenditure for the Financial Year 1875-76 has been affected by the rectification of errors or omissions in the Accounts of previous Years, discovered since the closing of such Accounts; inserted in pursuance of Treasury Letter, dated 30th April 1864.

VOTE.	HEAD OF SERVICE.	DEBITS.
No.		£. s. d.
1	Wages to Seamen, &c. - - - - -	2,266 19 6
2	Victuals and Clothing for ditto - - - - -	1,477 12 -
3	Admiralty Office - - - - -	99 2 -
4	Coast Guard, &c. - - - - -	1 2 6
5	Scientific Branch - - - - -	253 - 7
6	Dockyards, &c. at Home and Abroad - - - - -	1 - 8
7	Victualling Yards at Home and Abroad - - - - -	46 11 10
8	Medical Establishments at Home and Abroad - - - - -	21 - 9
10, Sec. I.	Naval Stores, &c. - - - - -	1,652 2 -
11	New Works, &c. - - - - -	19 19 1
12	Medicines and Medical Stores - - - - -	49 2 10
13	Martial Law and Law Charges - - - - -	44 14 9
14	Miscellaneous Services - - - - -	407 18 11
17	Army Department (Conveyance of Troops) - - - - -	12,115 2 2
-	Balances Irrecoverable - - - - -	1,590 1 4
	Net Debit relating to prior Years - - - £.	20,045 10 9

The above Net Debits consist of payments through Cash Accounts not received in time to be included in the Account of the year to which they related; of suspensions and disallowances removed subsequent to the closing of the Account for the year in which the payments, if correctly vouched, would have been charged; and of adjustments in the Accounts of previous years subsequent to the closing of such Accounts.

I, the undersigned, declare, to the best of my knowledge and belief, that no part of the Expenditure contained in the above Navy Appropriation Account has been incurred without authority superior to that of the Department, in cases where such superior authority is required by the Regulations.

H. Walker,  
Accountant General of the Navy, and  
Comptroller of Navy Pay.



REPORT of the COMPTROLLER and AUDITOR GENERAL upon the APPROPRIATION ACCOUNT of the RECEIPT and EXPENDITURE for NAVY SERVICES, for the Year ended the 31st of March 1876; prepared and submitted for the Information of the House of Commons, in pursuance of the 22nd and 32nd Sections of the Act 29 & 30 Vict. c. 39.

1. BY a statement forwarded to the Treasury from the Admiralty, it appears that the late Assistant Paymaster of Her Majesty's ship "Seagull" rendered no accounts for the period between 1st January and 25th July 1873. On the 18th of November 1873 this officer deserted, but was subsequently arrested and detained in custody until June 1875. The money which passed through his hands between the dates above-mentioned has been allowed on satisfactory evidence of payment, with the exception of 1,111*l.* 3*s.* 4*d.*; of this amount 588*l.* 7*s.* is the total of four bills drawn for the purchase of provisions in March, May, and June 1873, but no vouchers have been produced for these purchases, and it is stated that they are not now obtainable.

Unvouched  
Expenditure.

The Victualling Accounts show that fresh provisions of the value of 588*l.* 7*s.* were supplied during the Lady-day and Midsummer quarters 1873; and as these provisions do not form part of supplies paid for, either before March or subsequently to June, it is stated that the bills above referred to may be undoubtedly viewed as having been drawn in payment of the provisions in question.

Vouchers are not produced for the payment of savings of provisions between 1st January and 25th July 1873. The Provision Accounts show, however, that provisions of the value of 108*l.* 12*s.* were saved, and that savings have been paid for in each subsequent quarter.

The remaining sum of 414*l.* 3*s.* 7*d.* has been allowed, with the sanction of the Treasury, as a charge against "Balances Irrecoverable."

The sums of 588*l.* 7*s.* and 108*l.* 12*s.* 9*d.* have been allowed by the Admiralty as charges against Vote 2, "Victuals and Clothing for Seamen and Marines."

There is no doubt that a fair inference may be drawn that provisions had been supplied to the value of 588*l.* 7*s.*, and the amount paid to the contractor for them, and that the sum of 108*l.* 12*s.* had been paid for savings, inasmuch as it is shown that provisions of that value were saved, that no claims have since been made for them, and that savings for each subsequent quarter have been paid for; but, in the absence of vouchers in support of these charges, I have deemed it right, with reference to the provisions of the 27th section of the Exchequer and Audit Act, 29 & 30 Vict. c. 39, to bring the circumstances under notice in this Report.

2. Having observed that a sum of 10*l.* 10*s.* received on account of the sale of hides and skins at the Island of Ascension, had been credited to the Ascension Island Fund, I addressed a letter to the Admiralty on the 8th November 1876 (copy annexed), inquiring as to the reason of the proceeds of the sale of these unserviceable stores not having been credited to the Exchequer as Extra Receipts.

Proceeds of Old  
Stores not credited  
to Exchequer.

In reply to this letter, I was informed by the Admiralty (copy of letter annexed) that the sum in question was directed to be suspended on both sides of the Cash Account of Ascension, for Midsummer quarter, pending the receipt of an answer to inquiries made of Commodore Sir William Hewett on the subject of the Island Fund, and stating that after receipt of the reply, and on a decision being arrived at with reference to the questions to which it may give rise, a further communication would be sent to me.

In reply to a further letter, I was informed by the Admiralty on the 19th instant (copy of letter annexed), that no answer had been received from the Commodore on this subject.

3. The amount received in respect of Old Store and Extra Receipt Moneys for the year 1875-76, as shown at the foot of the Account, namely, 397,197*l.* 17*s.* 8*d.*, has been paid into the Exchequer.

Old Store and Extra  
Receipt Moneys.

4. The following Sub-Heads, for which no Votes were taken when the Estimates were laid before Parliament, have been introduced into the Account, viz. :—

New Sub-Heads.

	£.	s.	d.
Vote 1, G.—Colonial Pay and Field Allowances to Marines in Japan, &c.	330	11	6
Vote 1, —Field Allowances, &c. to Officers, &c. of the Ashantee Expedition		62	15
Vote 17, F.—Freight, &c. of Ships on Monthly Pay	1,274	—	4
Vote 17, H.—Coals for Steam Transports on Monthly Pay	8,304	8	1
Vote 17, S.—Pay and Contingent Expenses of Transport Officers Afloat, &c.	10	—	2

5. The Accounts received in office which had not been examined or included in the Account for the year 1875-76, and also those which had not been received when the Navy Account for the year was closed, will be found in the letter from the Admiralty of the 30th December 1876 (copy annexed).

Expenditure not  
included in the  
Account.

6. A Statement showing the amounts by which the Naval Expenditure has fallen short of or exceeded the sums voted, is appended to this Report. The Deficits on certain Votes, which amount to 161,617*l.* 17*s.* 2*d.*, have been partly met by Surpluses on other Votes temporarily appropriated in aid of the Deficits, and by an issue of 3,218*l.* 14*s.* 3*d.* out of

Deficits paid out of  
Surpluses.

the Vote of Credit for the Ashantee Expedition. This course received the sanction of the Lords of the Treasury, under the powers vested in their Lordships by the 4th Section of the Act 38 & 39 Vict. c. 78. (The correspondence between the Admiralty and the Treasury on this subject is annexed.)

E. F.  
Net Deficit.

7. The Net Deficit on the Grants which will have to be voted by Parliament is, as shown by the Account, 75,511*l.* 2*s.* 3*d.*

	£.	s.	d.
Grants - - - - -	10,828,412	14	3
Expenditure - - - - -	10,903,923	16	6
Net Deficit - - - - -	£. 75,511	2	3

#### BALANCE SHEET.

On the Balance Sheet attached to this Account (page 79) it will be observed that there is a credit balance of 4,672*l.* 14*s.* 10*d.*, for bills drawn by Accounting Officers not presented for payment, and which have been outstanding for more than six years, and the ledger containing the particulars of the balance in question, shows that 4,589*l.* 11*s.* 10*d.* is in respect of bills drawn between the years 1825 and 1855, and as it appeared improbable that the bills would ever be presented for payment after such a lapse of time, it became a matter for consideration whether the amount should not be paid over to the Exchequer. The remaining portion of the balance, namely, 83*l.* 3*s.*, consists of three bills, drawn between the years 1857 and 1860, and which might possibly be presented for payment.

G. H.

It will be seen by the correspondence (annexed) that the Lords of the Admiralty have agreed to the suggestion which I made to them, and have proposed to the Treasury that the total credit balance of 4,672*l.* 14*s.* 10*d.* should be transferred to the Exchequer.

Wm. Dunbar,  
Comptroller General of Her Majesty's Exchequer,  
and Auditor General of Public Accounts.

Exchequer and Audit Department,  
31 January 1877.

#### APPENDIX.

##### No. 1.

STATEMENT of the Amounts by which the NAVAL EXPENDITURE has fallen short of, or exceeded, the Sums VOTED for the Year 1875-76.

Number of Vote.	HEADS OF SERVICE.	EXPENDED.					
		Less than Voted.		More than Voted.			
		£.	s.	d.	£.	s.	d.
1	Wages of Seamen - - - - -	34,132	4	10	—	—	—
2	Victuals and Clothing for ditto - - - - -	-	-	-	35,095	16	6
3	Admiralty Office - - - - -	-	-	-	3,893	4	4
4	Coast Guard, Royal Naval Reserve, &c. - - - - -	2,902	3	4	—	—	—
5	Scientific Branch - - - - -	61	19	5	—	—	—
6	Dockyards and Naval Yards at Home and Abroad.	-	-	-	29,719	11	2
7	Victualling Yards at Home and Abroad - - - - -	1,208	18	5	—	—	—
8	Medical Establishments - ditto - - - - -	-	-	-	549	15	3
9	Marine Divisions - - - - -	663	19	5	—	—	—
10	Sect. 1: Naval Stores - - - - -	15,721	10	10	—	—	—
	Sect. 2: Steam Machinery, &c. - - - - -	-	-	-	10,067	2	5
11	New Works and Repairs - - - - -	19,664	-	9	—	—	—
12	Medicines and Medical Stores - - - - -	-	-	-	1,220	6	8
13	Martial Law and Law Charges - - - - -	88	6	10	—	—	—
14	Miscellaneous Services - - - - -	-	-	-	47,107	10	1
15	Half Pay, &c. - - - - -	8,339	14	-	—	—	—
	Sect. 1.: Miscellaneous Pensions and Allowances.	-	-	-	22,074	7	10
16	Sect. 2: Civil Pensions and Allowances - - - - -	105	2	10	—	—	—
17	Army Department: Conveyance of Troops - - - - -	-	-	-	9,209	14	7
	Balances Irrecoverable - - - - -	-	-	-	2,680	8	4
	Vote of Credit for the Ashantee Expedition - - - - -	3,218	14	3	—	—	—
	£.	86,106	14	11	161,617	17	2

NET DEFICIT - - - £.75,511. 2. 3.

## CORRESPONDENCE referred to in the foregoing REPORT.

(A.)

Exchequer and Audit Department,  
8 November 1876.

Sir,

IN the Navy Appropriation Account for the year 1875-76 is included a sum of 10*l.* 10*s.*, cash received on account of sale of hides and skins credited to the "Ascension Island Fund."

In reply to an observation in the Query Book on the Navy Account as to the reason of the proceeds of the sale of these unserviceable stores not having been credited to the Exchequer as Extra Receipts, it is stated that this is "to be considered as suspended on both sides of the Account."

I am directed by the Comptroller and Auditor General to request that you will move the Lords Commissioners of the Admiralty to cause him to be informed of the circumstances under which the sum in question is removed from the Account, and withheld from the Exchequer.

The Secretary of the Admiralty,  
&c. &c. &c.

I have, &c.  
(signed) *H. Treherne.*

(B.)

Admiralty, 25 November 1876.

Sir,

IN answer to Mr. Treherne's letter of the 8th instant, I am commanded by my Lords Commissioners of the Admiralty to inform you that the sum of 10*l.* 10*s.* on account of the sale of hides was directed to be considered as suspended on both sides of the Cash Account of Ascension for Midsummer quarter, 1875, pending the receipt of an answer to inquiries made by their Lordships of Commodore Sir William Hewett on the subject of the Island Fund.

The Commodore has been reminded of the necessity for furnishing the desired information as soon as practicable, and after receipt of the same, and on a decision being arrived at with reference to the questions to which it may give rise, a further communication will be addressed to you intimating the course which, in the opinion of my Lords, should be pursued in the present instance, as well as in similar cases for the future.

The Comptroller and Auditor General,  
Exchequer and Audit Department, Somerset House.

I am, &c.  
(signed) *Algernon Egerton.*

(C.)

Admiralty, 19 January 1877.

Sir,

IN answer to Mr. Treherne's letter of 11th instant, No. 99, asking whether any reply has been received from Commodore Sir William N. W. Hewett to the communication made to him by the Admiralty on the subject of the Island Fund at Ascension, I am commanded by my Lords Commissioners of the Admiralty to inform you that no answer has yet been received to their Lordships' letter of 27th October last, forwarding a copy of a former letter which, according to a communication received from the Commodore on the 24th of that month, could not be traced.

The Comptroller and Auditor General,  
Exchequer and Audit Department, Somerset House.

I am, &c.  
(signed) *Robert Hall.*

(D.)

Admiralty, 30 December 1876.

Sir,

I AM commanded by my Lords Commissioners of the Admiralty to forward to you the Appropriation Account for the year 1875-76, accompanied by the Surplus and Deficit Account, showing the Surplus or Deficit upon each Sub-head of the Votes, with explanations of the causes thereof, to which the approval of the Treasury has been obtained by letter of this day's date.

2. I am also to inform you that the whole of the Cash Accounts (3,486 in number) of Naval Accountants for the year 1875-76, received in office when the Naval Appropriation Accounts for that year was closed, have been examined, with the following exceptions, viz. :—

War Office Claims :		£.	s.	d.
Rent of Netley Lodge	- - - - -	75	14	8
Passages and Freight	- - - - -	2,507	8	-
Clothing, &c., issued to Royal Marines	- - - - -	1,958	-	-
Provisions and Hospital Stores	- - - - -	108	4	6
Subsistence at Sick Quarters	- - - - -	9	-	-
Lock Ward, Sheerness	- - - - -	109	-	9

and that the passed expenditure, amounting to 6,179,085*l.* 18*s.* 10*d.*, has been included in the Navy Appropriation Account in question.

3. I am further directed to state that the following were the only Cash Accounts not received at the time the Appropriation Account was closed, viz., of

		£.	s.	d.	} Since received.
Her Majesty's Ship "Discovery,"	1 July 1875 to 31 March 1876	265	1	11	
" " " " "Renard,"	March 1876	603	10	11	
" " " " "Ringdove,"	Christmas Quarter 1875	578	16	8	
" " " " "Vigilant,"	Lady Quarter 1876	2,401	11	9	
" " " " "Vulture,"	1 December 1875 to 11 January 1876	2,621	7	9	Estimated.

The Comptroller and Auditor General,  
Exchequer and Audit Department, Somerset House.

I am, &c.  
(signed) *Vernon Lushington.*



(E.)

Sir,

Admiralty, 29 December 1876.

I AM commanded by my Lords Commissioners of the Admiralty to transmit, for the information of the Lords Commissioners of Her Majesty's Treasury, an Abstract Account of Naval Receipt and Expenditure for the year 1875-76, accompanied by the Surplus and Deficit Account, showing the Surplus or Deficit upon each Sub-head of the Votes, with explanations of the causes thereof.

	£.	s.	d.
Vote 2 -	35,095	16	6
" 3 -	3,893	4	4
" 6 -	29,719	11	2
" 8 -	549	15	3
Sec. 2 } 10	10,067	2	5
Vote 12 -	1,220	6	8
" 14 -	47,107	10	1
" 16 } 1	22,074	7	10
Vote 17 -	9,209	14	7
Balances } 2	2,680	8	4
Irrecoverable }			

From this Account it will appear that a Deficit has arisen to the aggregate amount of 161,617 *l.* 17 *s.* 2 *d.* on Votes, as shown in the margin, and that on the remaining Votes an aggregate Surplus has accrued of 82,888 *l.* 0 *s.* 8 *d.*, but as the expenditure on account of the Ashantee War is defrayable out of the Vote of Credit for that war, the actual Deficit upon ordinary Naval Grants amounts to 75,511 *l.* 2 *s.* 3 *d.*

I am, therefore, to request that in accordance with the provisions of the Appropriation Act, 38 & 39 Vict. c. 78, and the regulations laid down in Treasury Minute of 27th January 1863, their Lordships of the Treasury will be pleased to give their sanction for temporarily appropriating the Surpluses appearing on Votes 1, 4, 5, 7, 9, 10, Sec. 1; 11, 13, 15, and 16, Sec. 2, amounting in the aggregate to 82,888 *l.* 0 *s.* 8 *d.* in aid of the Deficits arising on the other Votes.

I am further to advert to my letter of 19th August last, intimating that at that date a Deficit of 93,000 *l.* on the Navy Grants for 1875-76 appeared probable, notwithstanding that immediately after the termination of the financial year a small surplus on the aggregate of the Navy Votes was expected. The full explanations given in the Provisional Account which accompanied my letter, and also the Report of the Accountant General of the Navy, therewith forwarded, as to the causes of deviation, leave no room for further remarks on that subject, except that my Lords are pleased to observe that the actual Deficit is not so great as was expected by over 17,400 *l.*

In submitting the Navy Appropriation Account for the approval of my Lords, the Accountant General of the Navy has offered some remarks thereon, of which, as my Lords concur therein, I am to forward the enclosed copy for the information of the Lords of the Treasury.

I am further to request that the accompanying explanations may be returned to this Department, in order that the statement of Surpluses and Deficits may be rendered to the Exchequer and Audit Department by the 31st instant, as directed by the Exchequer and Audit Act, 29 & 30 Vict. c. 39.

I am, &amp;c.

The Secretary of the Treasury.

(signed) *Algernon Egerton.*

(F.)

Sir,

Treasury Chambers, 3 January 1877.

I HAVE laid before the Lords Commissioners of Her Majesty's Treasury Mr. Egerton's letter of the 29th ultimo, transmitting the Account of Naval Receipt and Expenditure for the year 1875-76, with the statement of, and explanations with reference to, the Savings and Deficiencies on the several Votes, from which it appears that a Deficit has arisen on certain Votes (as per margin) amounting on the whole, and including irrecoverable debts, to the sum of 161,617 *l.* 17 *s.* 2 *d.*, and that on the remaining Votes a surplus has accrued of the sum of 82,888 *l.* 0 *s.* 8 *d.*

	£.	s.	d.
Vote 2 -	35,095	16	6
" 3 -	3,893	4	4
" 6 -	29,719	11	2
" 8 -	549	15	3
Sec. 2 } 10	10,067	2	5
Vote 12 -	1,220	6	8
" 14 -	47,107	10	1
" 16 } 1	22,074	7	10
Vote 17 -	9,209	14	7
Balances } 2	2,680	8	4
Irrecoverable }			

As, however, the sum of 3,218 *l.* 14 *s.* 3 *d.* is chargeable on the Vote of Credit for the Ashantee War, the actual deficit on ordinary expenditure amounts to 75,511 *l.* 2 *s.* 3 *d.*

I am directed to state that my Lords approve of the sum of 161,617 *l.* 17 *s.* 2 *d.* being included in the Naval Account for the year 1875-76, and, by virtue of the power vested in them by the Act, 38 & 39 Vict. c. 78, they authorise the appropriation of the sum of 82,888 *l.* 0 *s.* 8 *d.*, the amount of savings which have accrued, to meet (so far as it will go) the said deficiency.

I am to add, that the necessary directions will be given for the transfer to Naval Funds of the sum of 3,218 *l.* 14 *s.* 3 *d.* out of the Vote of Credit for the Ashantee War.

I am, &amp;c.

The Secretary to the Admiralty.

(signed) *R. R. W. Lingen.*

(G.)

Sir,

Exchequer and Audit Department,  
24 January 1877.

I AM directed by the Comptroller and Auditor General to state, for the information of the Lords Commissioners of the Admiralty, that he observes in the Balance Sheet attached to the Appropriation Account of the Navy, 1875-76, that there is a Credit Balance of 4,672 *l.* 14 *s.* 10 *d.*, in respect of bills drawn by accounting officers not presented for payment, and which have been outstanding for more than six years.

On reference to the ledger containing the details of the balance in question, it is found that 4,589 *l.* 11 *s.* 10 *d.* is in respect of bills drawn between the years 1825 and 1855, and as it would seem improbable that the bills would be presented after such a lapse of time, I am to request that you will move their Lordships to cause the Comptroller and Auditor General to be informed whether there is any objection to the payment of the sum in question to Her Majesty's Exchequer.

I have to request that a reply to this communication may be sent, if possible, before the 31st instant, the date on which it is required that the Report on the Navy Account should be sent to the Treasury.

I am, &amp;c.

The Secretary of the Navy.

(signed) *H. Treherne.*

(H.)

Sir,

Admiralty, 30 January 1877.

IN reply to Mr. Treherne's letter of 24th instant, No. 7, I am commanded by my Lords Commissioners of the Admiralty to inform you that a letter has this day been addressed to the Secretary of the Treasury acquainting him of the purport of the communication referred to, and stating that there is no objection on the part of the Admiralty to the transfer to the Exchequer of the total Credit Balance of 4,672 *l.* 14 *s.* 10 *d.*, under the head of "Outstanding Bills, Drafts, &c.," provided that the Lords Commissioners of the Treasury approve of this course being adopted, and on the understanding that, should any of the bills be presented, the applications for payment are to be referred to the Treasury for settlement.

I am, &amp;c.

The Comptroller and Auditor General,  
Exchequer and Audit Department, Somerset House.(signed) *Algernon Egerton.*



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STATEMENT of the SURPLUSES and DEFICITS upon the GRANTS for NAVY SERVICES, in the Year ended the 31st day of March 1876; showing all Cases in which the Navy Department has obtained the Sanction of the Treasury to Expenditure not provided for in the Grants for that Year, together with Copies of the Representations made to the Treasury by the Board of Admiralty; also the BALANCE SHEET, showing the Ledger Balances on the 30th September 1876, the Date on which the Account of Naval Receipt and Expenditure for the Year 1875-76 was Closed.

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## ACCOUNT of the Sums Expended, compared with the Sums Granted, for NAVY SERVICE

SERVICE.	GRANT.	(A.) EXPENDITURE.	Abate Amount included in Column (A.), on account of Expenditure for Ashantee Expedition.	NET ORDINARY NAVAL EXPENDITURE.
VOTE No. 1.				
WAGES, &c., TO SEAMEN AND MARINES:	£. s. d.	£. s. d.	£. s. d.	£. s.
A.—Wages of and Allowances to Seamen and Marines Afloat.	*2,376,655 - -	2,341,081 5 5	11 1 -	2,341,070 4
B.—Expense of Raising Men and Boys - -	3,000 - -	2,479 9 5	- - -	2,479 9
C.—Subsistence of Commissioned and Staff Officers, Royal Marines, on Shore.	55,992 - -	52,311 19 5	- - -	52,311 19
D.—Subsistence of Non-Commissioned Officers and Privates, Royal Marines, on Shore.	177,850 - -	184,996 1 5	- - -	184,996 1
E.—Prizes for Good Shooting - - - -	1,797 - -	1,435 12 6	- - -	1,435 12
F.—Recruiting Expenses, Royal Marines -	8,768 - -	8,745 8 5	- - -	8,745 8
G.—Colonial Pay and Field Allowances to Marines in Japan, &c.	- - -	330 11 6	- - -	330 11
H.—Contingencies, Marine Service - - -	20,000 - -	18,486 12 1	- - -	18,486 12
Field Allowances, &c., to Officers, &c., of the Ashantee Expedition.	- - -	62 15 -	62 15 -	- -
	*2,644,062 - -	2,609,929 15 2	73 16 -	2,609,855 19
	2,609,855 19 2			
Net Surplus - - - £.	34,206 - 10			

\* Including Supplementary Estimate.

the Year ended 31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes.

EXPENDITURE, COMPARED WITH GRANT.			EXPLANATION OF THE CAUSES OF VARIATION BETWEEN EXPENDITURE AND GRANT.			
Less than Granted.			More than Granted.			
£.	s.	d.	£.	s.	d.	
35,584	15	7	-	-	Surplus: Mainly owing to the saving from the numbers of Officers, Boys, Marines, and Coast Guard on Shore, underborne, having considerably exceeded the deficit arising from petty officers and seamen overborne, and from the payment of double pay to the Crew of "Valorous," &c.	
520	10	7	-	-	Surplus: The actual requirements having been less than provided for, owing to fewer Boys having been entered, and other causes.	
3,680	-	7	-	-	Surplus: Fewer Officers borne than allowed and provided for.	
-	-	-	7,146	1	5	Deficit: More men borne at the divisions on shore than were provided for, and fluctuations in the rates of pay. This deficit has tended to increase the Surplus on Sub-Head A.
361	7	6	-	-	Surplus: Fewer men having become entitled to Prizes than were estimated for.	
22	11	7	-	-	Surplus: A slight variation between the Estimate and Expenditure.	
-	-	-	330	11	6	Deficit: It not having been anticipated that a Captain and party of three Marines would be required to remain at Japan during the whole year, owing to the work necessitated by the conversion of the Camp into Naval Sick Quarters.
1,513	7	11	-	-	Surplus: The Contingent Allowances due on 31st March 1876 were not paid until April, though provided for in the Estimates, 1875-76.	
-	-	-	-	-	No Naval Vote taken, being defrayed out of the Vote of Credit for the Ashantee War.	
41,682	13	9	7,476	12	11	
7,476	12	11				
34,206	-	10				

Account of the Sums Expended, compared with the Sums Granted, for Navy Services, in the Year ended

SERVICE.	GRANT.	(A.) EXPENDITURE.	Abate Amount included in Column (A.), on account of Expenditure for Ashantee Expedition.	NET ORDINARY NAVAL EXPENDITURE.
VOTE No. 2.				
VICTUALS AND CLOTHING FOR SEAMEN AND MARINES:	£. s. d.	£. s. d.	£. s. d.	£. s. d.
A.—Provisions received under Contract - -	* 540,389 - -	551,893 7 -	- - -	551,893 7 -
B.—Savings (Payments for Provisions not taken up).	141,500 - -	149,652 5 2	- - -	149,652 5 2
C.—Allowances in lieu of Provisions and Fuel, &c.	188,816 - -	195,367 16 7	- - -	195,367 16 7
D.—Lights for Service Afloat - - - -	36,000 - -	33,108 2 4	- - -	33,108 2 4
E.—Allowances in lieu of Lights to Officers, &c., Afloat.	13,000 - -	12,012 8 3	- - -	12,012 8 3
F.—For Mess Traps and Contributions in Aid of Mess.	16,000 - -	17,033 6 7	- - -	17,033 6 7
G.—Victualling Stores received under Contract, &c.	37,000 - -	28,133 2 11	- - -	28,133 2 11
H.—Freight, Lighterage, &c. on Provisions and Victualling Stores.	13,000 - -	11,949 - 4	- - -	11,949 - 4
I.—Seamen's Clothing, Soap, and Tobacco -	216,493 - -	248,089 17 -	69 11 10	248,020 5 2
K.—Marine Clothing and Appointments - -	61,274 - -	62,145 18 5	- - -	62,145 18 5
L.—Allowances in lieu of Marine Clothing, &c. -	3,925 - -	4,199 4 6	136 8 -	4,062 16 6
M.—Marine Barrack Stores - - - -	14,781 - -	13,412 8 2	- - -	13,412 8 2
N.—Beer Money and Excess Cost of Rations for Royal Marines on Shore.	24,674 - -	27,273 11 4	- - -	27,273 11 4
Abate,—	*1,306,802 - -	1,354,270 8 7	205 19 10	1,354,064 8 9
O.—Credits for Clothing, use of Mess Traps, &c.	199,021 - -	211,393 12 1 (Credit.)	- - -	211,393 12 1
£.	*1,107,781 - -	1,142,876 16 6	205 19 10	1,142,670 16 8
				1,107,781 - -
			Deficit - - - £.	34,889 16 8

\* Including Supplementary Estimate.



31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes - *continued*.

EXPENDITURE, COMPARED WITH GRANT.				EXPLANATION OF THE CAUSES OF VARIATION BETWEEN EXPENDITURE AND GRANT.	
Less than Granted.		More than Granted.			
£.	s. d.	£.	s. d.		
-	-	11,554	7 -	Deficit: Resulting from the Fleet having been more on Fresh Meat Victualling, and the consumption of diet of that description having considerably exceeded the anticipations; also, from the chocolate manufactured at home, and purchased abroad, having cost more than was estimated.	
-	-	8,152	5 2	Deficit: Owing to increased Payments at Home and Abroad for portions of the ration not taken up.	
-	-	6,551	16 7	Deficit: This Item is based on the average payments of previous years. The excess in the present instance is due to a larger number of men receiving money in lieu of provisions in the harbour ships.	
2,891	17 8	-	-	Surplus: Effected by a reduction in the purchases, it having been found unnecessary to buy to the full extent originally estimated.	
987	11 9	-	-	Surplus: Due to the full provision made under this Item not being required.	
-	-	1,033	6 7	Deficit: Due to varying requirements, and somewhat higher prices.	
8,866	17 1	-	-	Surplus: Due to larger supplies being made to other services on repayment, and savings effected on the purchase of coals, staves, and other articles.	
1,050	19 8	-	-	Surplus: Owing to the expenditure having been less than the average of previous years.	
-	-	31,527	5 2	Deficit: Arising from the free kit to Boys granted in the year 1874-75, not having been provided for in the Estimates for 1875-76, amounting to about 15,000 l. Also from a large outlay to meet the wants of other Departments (the value being subsequently recovered and included as a credit under Item O.) and from an increase in the cost of tobacco, owing to the failure of the American crop; likewise from payment having been made in this year for some articles of clothing which could not be obtained from the contractors before the 31st March 1875.	
-	-	871	18 5	Deficit: Due to a larger quantity of Clothing having been purchased for issue on repayment than was anticipated.	
-	-	137	16 6	Deficit: More Men having rejoined Head Quarters who were entitled to receive compensation in lieu of Clothing than were expected.	
1,368	11 10	-	-	Surplus: Owing to the prices paid for Coals, &c., having been less than was anticipated, the sum included for unforeseen contingencies not having been expended, and to 250 tons of coal provided for in the Estimates not having been received.	
-	-	2,599	11 4	Deficit: Due to an increase in the contract prices of Bread and Meat during the year, and more Men having been borne at the Divisions than provided for.	
15,165	18 -	62,428	6 9		
-	-	12,372	12 1	Surplus: Arising from larger supplies having been made to other departments on repayment, and from the amount of Clothing, &c., taken up by the Seamen and Marines having been greater than was anticipated.	
15,165	18 -	50,055	14 8		
		15,165	18 -		
£.		34,889	16 8		

ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services, in the Year ending

SERVICE.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.	
			Less than Granted.	More than Granted.
VOTE No. 3.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
ADMIRALTY OFFICE:				
A.—Salaries, Wages, and Allowances, Admiralty Office.	169,216 - -	170,791 13 5	- - -	1,575 13 -
B.—Rents, Water, &c., Admiralty Office - - -	6,500 - -	6,402 17 11	97 2 1	- - -
C.—Fuel and Light ditto - - - -	2,500 - -	2,641 5 11	- - -	141 5 11
D.—Travelling Expenses ditto - - - -	3,000 - -	4,746 8 11	- - -	1,746 8 11
E.—Carriage of Parcels, and Contingencies, Admiralty Office.	2,700 - -	3,226 18 2	- - -	526 18 2
£.	183,916 - -	187,809 4 4	97 2 1	3,990 6 5
		183,916 - -		97 2 1
Net Deficit - - - £.		3,893 4 4	£.	3,893 4 -
VOTE No. 4.				
COAST GUARD SERVICE, AND ROYAL NAVAL RESERVE, &c.:				
A.—Salaries, Wages, &c., Royal Naval Reserves Office.	4,830 - -	3,933 14 11	396 5 1	- - -
B.—Rents and Insurance of Buildings, Coast Guard Establishments on Shore.	29,065 - -	28,495 5 -	569 15 -	- - -
C.—Travelling Expenses, Removal of Officers and Men and their Families, &c., Coast Guard Establishments on Shore.	11,211 - -	11,925 3 -	- - -	714 3 -
D.—Fuel and Light, Coast Guard Establishments on Shore.	4,301 - -	4,326 3 7	- - -	25 3 7
E.—Contingencies, Coast Guard Establishments on Shore.	2,898 - -	3,047 - 10	- - -	149 - 10
F.—Royal Naval Reserve, Wages, Allowances, Drill, &c.	134,700 - -	131,903 9 2	2,796 10 10	- - -
G.—Seamen and Marine Pensioners Reserve -	1,000 - -	551 18 1	448 1 11	- - -
H.—Royal Naval Artillery Volunteer Force -	1,000 - -	1,420 2 1	- - -	420 2 1
£.	188,505 - -	185,602 16 8	4,210 12 10	1,308 9 6
	185,602 16 8		1,308 9 6	
Net Surplus - - - £.	2,902 3 4	£.	2,902 3 4	

31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued.*

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

Deficit: Arising from the grant of an improved Scale of Pay to the Clerks of the Naval Department, an Increase of Salary to the Director of Contracts, the employment of Civil Service Writers, authorised for short periods, and during absence of clerks from illness, in Excess of that contemplated, and from the payments for remuneration to Established Clerks, Draughtsmen, Messengers, &c., for Extra Attendance and Special Services (including weeding papers) having been more than provided for.

Surplus: Owing to the actual requirements having proved to be less than estimated.

Deficit: Arising from heavier expenditure on Coals than was contemplated; less a Saving through Reduced Cost of Gas.

Deficit: Arising from the Provision made in the Estimates for 1875-76 having proved insufficient to meet the actual requirements of the Service. The provision has been increased in the Estimates for 1876-77.

Deficit: Arising from the Provision made in the Estimates for 1875-76 having proved insufficient to meet the actual requirements of the Service. The provision has been increased in the Estimates for 1876-77.

Surplus: Owing to the Travelling Charges, &c., this year having fallen considerably short of the Estimate. The provision has been reduced in the Estimates for 1876-77.

Surplus: Arising from some premises formerly leased for occupation by the Coast Guard having been given up and replaced by Government Buildings.

Deficit: Owing to Alterations made in the Distribution of Stations and Divisions since the Estimate was framed.

Deficit: Arising from Alterations in Detachments and Stations.

Deficit: Owing to the Expenditure having exceeded that of the last completed year upon which the Estimate was based.

Surplus: Owing to the numbers of the Force on the average throughout the year having been less than anticipated.

Surplus: Owing to the requirements of the year having fallen short of the expenditure anticipated.

Deficit: Owing to the requirements of the Service having exceeded the Estimate.

ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services, in the Year ended

SERVICE.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.	
			Less than Granted.	More than Granted.
VOTE No. 5.				
SCIENTIFIC BRANCH:				
	£. s. d.	£. s. d.	£. s. d.	£. s. d.
A.—Salaries, Wages, and Allowances, Royal Observatory.	4,622 - -	4,454 15 3	167 4 9	- -
B.—Contingencies, Royal Observatory - - - -	1,896 - -	2,094 14 8	- -	198 14 8
B. B.—Expenses in connection with Observations of the Transit of Venus in 1874.	2,340 - -	5,679 6 7	- -	3,339 6 7
C.—Observatory at the Cape of Good Hope - - -	3,033 - -	2,688 19 4	344 - 8	- -
D.—Nautical Almanac - - - - -	2,890 - -	2,749 8 10	140 11 2	- -
E.—Chronometers - - - - -	1,182 - -	1,288 2 8	- -	106 2 8
F.—Compass Department - - - - -	1,828 - -	1,861 6 10	- -	33 6 10
G.—Rewards, Experiments, &c., for Scientific Purposes.	300 - -	250 - -	50 - -	- -
H.—Inspection of Naval, &c. Schools - - - -	1,072 - -	1,139 13 1	- -	67 13 1
K.—Royal United Service Institution - - - -	300 - -	300 - -	- -	- -
L.—Libraries and Museums at Haslar and Plymouth Hospitals.	100 - -	103 19 9	- -	3 19 9
M.—Salaries, Wages, and Allowances, Hydrographical Department.	8,395 - -	8,098 18 10	296 1 2	- -
Carried forward - - - £.	27,958 - -	30,709 5 10	997 17 9	3,749 3 7



31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

Surplus: Mainly arising from the requirements for Supernumerary Computers having been less than provided for.

Deficit: Caused by the Repairs to the Buildings of the Royal Observatory having been greater than estimated for.

Deficit: Arising from it having been found necessary to employ Observers after their return from the Expedition, for a longer period than was expected in completing the record of observations, &c., from the payments for instruments, &c. (including work at the Royal Observatory) being greater than was expected, and from the expenditure in 1875-76 having included pay and contingent expenses more properly belonging to the preceding year, which was the period in which the bulk of the expense for this special service was incurred. It could not be foreseen, when the Estimates were framed for 1875-76, that any large sum would stand over from 1874-75 to the following year.

Surplus: Caused principally by the Repairs to the Buildings of the Cape Observatory having been less than estimated for, and by a reduction in the anticipated expenditure for printing.

Surplus: Arising from an appointment at the Minimum Rate of Salary in lieu of a Computer pensioned, and from a Saving on the provision for contingencies.

Deficit: Caused by the large amount of Repairs to Chronometers not anticipated when the Estimate was framed.

Deficit: Mainly caused by the Travelling Expenses of Officers in connection with the Adjustment of Compasses of Her Majesty's Ships having been greater than anticipated.

Surplus: Owing to it not having been found necessary to expend to the extent provided.

Deficit: Arising from the expenditure for Travelling having amounted to more than was anticipated when the Estimate was framed.

Deficit: Expenditure slightly in excess of the Estimate.

Surplus: Caused by the Non-employment of a Writer for whom provision was made, and by Removals in the Staff of Draughtsmen of the Department; and less required for temporary assistants, preparing sailing directions.

Account of the Sums Expended, compared with the Sums Granted, for Navy Services, in the Year ended

SERVICE.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.			
			Less than Granted.		More than Granted.	
VOTE No. 5— <i>continued.</i>	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
SCIENTIFIC BRANCH— <i>continued.</i>						
Brought forward - - -	27,958 - -	30,709 5 10	997 17 9	3,749 3 7		
N.—Drawing, Engraving, Printing, and Mounting Charts.	11,000 - -	10,121 7 5	878 12 7	- -		
O.—Contingencies: Hydrographical Department -	1,000 - -	2,092 13 -	- -	1,092 13 -		
P.—Coast and other Surveys - - - -	26,500 - -	22,821 16 4	3,678 3 8	- -		
Q.—Royal Naval College, Greenwich - - -	35,688 - -	36,314 9 2	- -	626 9 2		
R.—Conduct of Examinations, Royal Naval College, Greenwich.	1,488 - -	1,417 2 1	70 17 11	- -		
S.—Naval Museum, Greenwich - - - -	1,190 - -	787 6 6	402 13 6	- -		
T.—Expenses connected with Candidates for the Naval Medical Service.	2,500 - -	2,998 - 3	- -	498 - 3		
	107,324 - -	107,262 - 7	6,028 5 5	5,966 6 -		
	107,262 - 7		5,966 6 -			
Net Surplus - - - £.	61 19 5	£.	61 19 5			
VOTE No. 6.						
DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD:						
A.—Salaries and Allowances, Dockyards at Home -	103,995 - -	104,599 17 3	- -	604 17 3		
B.—Rents, Water, &c.. Dockyards at Home - -	3,159 - -	3,322 16 2	- -	163 16 2		
C.—Gas, Dockyards at Home - - - -	7,000 - -	7,043 9 3	46 10 9	- -		
D.—Contingencies, Dockyards at Home - - -	3,871 - -	4,334 14 7	- -	463 14 7		
Carried forward - - - £.	118,115 - -	119,300 17 3	46 10 9	1,232 8 -		

31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

Surplus : This is merely the difference between an estimated and an actual Expenditure, depending on the demands of the public for Admiralty Charts.

Deficit : Caused principally by the purchase of several scientific instruments, photographic apparatus, &c., for the Arctic Expedition, decisions respecting which occurred subsequently to the framing of the Supplementary Estimate for this purpose in February 1875. The balance of the Deficit partly arises from the sum voted for the Arctic Manual prepared by the Royal Society (provision for which was made in the Supplementary Estimate, 1874-75) being disbursed during the present year.

Surplus : Caused mainly by the non-employment of a surveying vessel on the coast of China, provision for which was made in the Estimates, 1875-76, and by the withdrawal of a surveying ship from the East Coast of Africa in the summer of 1875, which was not expected when the Estimates were framed.

Deficit : Arising from the College requirements for furniture and other stores having exceeded the Estimate; the deficit would have been greater but for a net saving on other items.

Surplus : Arising from fees to Examiners having fallen short of the Estimate. The saving would have been greater but for the payment of arrears of tuition allowance to the Naval Instructor.

Surplus : Mainly owing to the purchase of certain cases and tables having been postponed, and to the restoration of pictures not having been completed.

Deficit : Mainly owing to the claims of the War Office on account of the Army Medical School at Netley having been settled more closely than in previous years, and to the promotion of the Naval Assistant Professor to a higher rank.

Deficit : Arising from transfer of Officers from Full Pay, Royal Navy, to the Salary List leading to an alteration in dates of payment, and consequent inclusion in this Financial Year's Account of more than twelve months pay; from the grant of an improved scale of pay to Chaplains (under Order in Council, 13th May 1875), and from acting appointments of Foremen at Chatham not provided for; the excess being reduced by savings from deaths and removals in the Clerical Staff, &c.

Deficit : Mainly due to larger expenditure for Water than anticipated (sanctioned by Treasury Letter of 11th March 1876 \*); also, to payment of Tithes at Portsmouth not having been provided for.

Surplus : Being the difference between an estimated and an actual expenditure.

Deficit : Owing to requirements of the Service for Travelling and other Contingent Expenses having exceeded the amount anticipated when the Estimates were prepared, and to no provision having been made under this Vote for the Travelling Expenses, &c. of the Assistant Civil Engineer at Portland, whose pay was transferred from Vote 11.

\* Copy of Application made to Treasury, and Treasury reply thereto, appended (*see* pages 22 and 23)

ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services, in the Year ended

SERVICE.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.	
			Less than Granted.	More than Granted.
VOTE No. 6—continued.				
DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD—continued.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Brought forward - - -	118,115 - -	119,300 17 3	46 10 9	1,232 8
E.—Wages to Artificers, &c., Dockyards at Home -	*1,030,057 - -	1,044,765 18 1	- - -	14,708 18
F.—Wages, &c., Yard Service Afloat, Dockyards at Home.	28,928 - -	28,213 8 10	714 11 2	- - -
G.—Hire of Teams, Dockyards at Home - - -	8,553 - -	8,550 11 -	2 9 -	- - -
H.—Wages, &c., Police Force, Dockyards at Home	28,193 - -	28,250 8 7	- - -	57 8
I.—Extra Pay to Artificers, &c., of the Fleet, Dock- yards at Home.	300 - -	217 9 10	82 10 2	- - -
K.—Salaries and Allowances, Naval Yards Abroad -	38,394 - -	39,891 17 1	- - -	1,497 17
L.—Rents, Water, &c., Naval Yards Abroad - - -	642 - -	684 3 3	- - -	42 3
M.—Gas, Naval Yards Abroad - - - -	460 - -	389 8 8	70 11 4	- - -
N.—Contingencies, Naval Yards Abroad - -	1,031 - -	1,165 10 5	- - -	134 10
O.—Wages to Artificers, &c., Naval Yards Abroad -	50,277 - -	63,696 1 8	- - -	13,419 1
P.—Wages, &c., Yard Service Afloat, Naval Yards Abroad.	8,320 - -	6,783 17 1	1,536 2 11	- - -
Q.—Hire of Teams, Naval Yards Abroad - - -	697 - -	633 16 3	63 3 9	- - -
R.—Wages, &c., Police Force, Naval Yards Abroad	10,332 - -	10,645 12 8	- - -	313 12
S.—Extra Pay to Artificers, &c., of the Fleet, Naval Yards Abroad.	2,350 - -	3,179 10 6	- - -	829 10
£.	*1,326,649 - -	1,356,868 11 2	2,515 19 1	32,235 10
		1,326,649 - -		2,515 19
Net Deficit - - - £.		29,719 11 2	£.	29,719 11

\* Including Supplementary Estimate.



31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

**Deficit:** The sum of 9,000 *l.* was allowed by Treasury Letter of the 8th February 1876, † to be expended in the Wages of additional Men employed, viz., 5,000 *l.* at Chatham to advance in the most economical manner the ships building in the Yard, and 4,000 *l.* at Portsmouth to advance the “Inflexible,” to enable her to be launched by a particular date, and to obviate the discharge of a number of good men whose services would be required again immediately after the close of the financial year. The provision in the Supplementary Estimate for the Wages of Men at Portsmouth in preparing the “Serapis” and “Osborne,” for the visit of the Prince of Wales to India was insufficient, and was exceeded by somewhat over 5,000 *l.*; and the remainder of the deficit on this Sub-Head consists of small differences at the other Yards.

**Surplus:** Mainly owing to the Crews having been underborne at most of the Yards.

**Surplus:** A slight variation from the Estimate.

**Deficit:** Arising from the employment of extra Police at the launch of the “Alexandra,” &c., reduced by small savings at various Yards.

**Surplus:** Arising from the requirements of the Service having proved less than anticipated.

**Deficit:** Mainly owing to increased pay and the overlapping of time, for which pay is due, on change of Naval Officers borne on Ships Books for service at Establishments; to increase of Sea Pay for length of Service under the Regulations; to retention of Engineers at Hong Kong for a portion of the year, until their places were filled by Engine-room Artificers as provided for; to the special allowance to a Clerk of the Works lent from Chatham to the Cape of Good Hope not having been provided for; and to the payment of arrears of allowance to the Military Medical Officer at Trincomalee. The excess so caused has been reduced by savings from vacancies, &c.

**Deficit:** Owing to the payments for Water generally having been greater than was anticipated, and to charges for Water at Hong Kong and Taxes at Trincomalee not foreseen when the Estimate was framed.

**Surplus:** The actual outlay having fallen short of the Estimate.

**Deficit:** Owing to the requirements of the Service for Travelling Expenses and other Contingencies, especially at the Cape of Good Hope, having been greater than was anticipated.

**Deficit:** Mainly owing to the employment of additional men at Gibraltar in making good defects of ships of the Flying Squadron, the hulk “Glendower,” and the tank vessel “Ketch;” to the refitting at Malta, for re-commission, of the “Rapid,” “Research,” “Helicon,” &c., and making good defects of ships of the Mediterranean Fleet; and to the hire at Hong Kong of additional men for refitting certain vessels on the Station, and for converting hull of “Victor Emanuel” into a Receiving Ship.

**Surplus:** Mainly owing to the provision for Gibraltar and Malta Yards combined, made whilst altered arrangements were under consideration, being in excess of the requirements; a reduction has been made in the Estimates, 1876–77. There was also saving effected at Halifax and Bermuda.

**Surplus:** Owing to small savings at each Yard.

**Deficit:** Chiefly due to a proportion of Wages retained in hand as security for the due performance of duty on the part of the Police at Hong Kong, having been refunded under the new regulations as to Pay, &c. (which do not require this restriction), and to the repayment to the War Office for a supply of accoutrements and arms at the same Yard not provided for.

**Deficit:** Owing to more Officers and Men of the Fleet being employed in the Yards than anticipated, chiefly at Gibraltar, Cape of Good Hope, and Sydney, and for the most part attributable to heavy repairs of Ships.

† Copies of Application made to Treasury, and Treasury reply thereto, appended (*see* page 23).

## ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services, in the Year

(A.)

Sir,

Admiralty, 6 March 1876.

I AM commanded by the Lords Commissioners of the Admiralty to forward, for the information of the Lords Commissioners of Her Majesty's Treasury, the accompanying statement of expenditure during the financial year ending 31st instant, for Water at the several Naval Establishments at Home, showing a net excess of 76 l. 19 s. 2 d. over the Votes.

At the same time I am to state that there is a probable net surplus under the same Votes, for Gas, of about 480 l., out of which the excess above named is proposed to be met, and to request you will move their Lordships of the Treasury to sanction this appropriation.

The Secretary of the Treasury.

I am, &c.  
(signed) Robert Hall.

February 1876.

## STATEMENT of AMOUNTS Voted and Expended for Water to the several Home Naval Establishments, during the Year 1875-76.

ESTABLISHMENT.	Vote.	Amount Voted.	Amount Expended.	Surplus.	Excess.	Net Surplus.	Net Excess.
NAVAL YARDS :		£.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Chatham - - - -	6	-	7 10 -	- - -	7 10 -		
Portsmouth - - -	"	2,200	2,310 18 4	- - -	110 18 4		
Devonport - - -	"	550	548 15 -	1 5 -	-		
Keyham - - - -	"	300	268 5 6	31 14 6	-		
		3,050	3,135 8 10	32 19 6	118 8 4	- - -	85 8 10
VICTUALLING YARDS :							
Deptford - - - -	7	300	349 16 2	- - -	49 16 2		
Plymouth - - - -	"	250	250 - -	- - -	-		
		550	599 16 2	- - -	49 16 2	- - -	49 16 2
HOSPITALS :							
Plymouth - - - -	8	100	131 17 4	- - -	31 17 4		
Yarmouth - - - -	"	360	343 - 9	16 19 3	-		
		460	474 18 1	16 19 3	31 17 4	- - -	14 18 1
BARRACKS :			Estimated.				
Chatham - - - -	9	40	40 - -	- - -	-		
Eastney - - - -	"	350	355 2 2	- - -	5 2 2		
Plymouth - - - -	"	150	113 4 11	36 15 1	-		
Walmer - - - -	"	280	238 9 -	41 11 -	-		
		820	746 16 1	78 6 1	5 2 2	73 3 11	
						73 3 11	150 3 1
							73 3 11
							Estimated Net Excess - - £. 76 19 2

ended 31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*contd.*

Sir,

Treasury Chambers, 11 March 1876.

I HAVE laid before the Lords Commissioners of Her Majesty's Treasury your letter of the 6th instant, as to the excess of expenditure, amounting to 76 l. 19 s. 2 d., which has arisen during the current financial year, for Water at the several Naval Establishments at Home, over the sum provided in the Votes for 1875-76; and I am to state, for the information of their Lordships of the Admiralty, that my Lords sanction the said excess being defrayed out of the surplus, estimated at about 480 l., which it is expected will accrue under the same Votes on account of Gas.

I am, &c.

The Secretary of the Admiralty.

(signed) *William Law.*

(B.)

Sir,

Admiralty, S.W., 5 February 1876.

I AM commanded by my Lords Commissioners of the Admiralty to request, with reference to the verbal communications that have passed between the First Lord and the Chancellor of the Exchequer, that the Lords Commissioners of the Treasury will signify their concurrence in the transfer from Vote 1, Navy Estimates, 1875-76, of a sum of 5,000 l., to Vote No. 6, for Wages at Chatham Yard, required in excess of that Vote for the purpose of advancing in the most economical manner the work on the ships now building at that yard, during the current financial year; and in the transfer also from Vote 1 of a sum of 4,000 l. to Vote No. 6, for Wages at Portsmouth Yard, required in excess of that Vote, in order to expedite the smith's work on the "Inflexible," a work which my Lords consider very desirable, and at the same time to avoid the discharge of a number of good men whose services would be required again immediately after the close of the present financial year.

2. As reported in my letter of the 25th ultimo, A. G., No. 1, the surplus expected to be realised on Vote 1, for 1875-76, is about 32,000 l.

I am, &c.

The Secretary to the Treasury.

(signed) *Algernon Egerton.*

Sir,

Treasury Chambers, 8 February 1876.

I AM directed by the Lords Commissioners of Her Majesty's Treasury to state, for the information of their Lordships of the Admiralty, that my Lords sanction the transfer of the undermentioned sums from Vote No. 1 to Vote No. 6 of the Navy Estimates for the current financial year, as proposed in Mr. Egerton's letter of the 5th instant, viz. :—

£.	
5,000	for Wages at Chatham Yard.
4,000	for Wages at Portsmouth Yard.
£. 9,000	

I am, &c.

The Secretary of the Admiralty.

(signed) *William Law.*

ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services, in the Year ended

SERVICE.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.			
			Less than Granted.		More than Granted.	
VOTE No. 7.	£. s. d.	£. s. d.	£. s. d.		£. s. d.	
<b>VICTUALLING YARDS AT HOME AND ABROAD:</b>						
A.—Salaries and Allowances, Victualling Yards at Home.	14,653 - -	14,603 19 2	49 - 10	-	-	-
B.—Rents, Water, &c., Victualling Yards at Home.	568 - -	621 1 4	- - -	-	53 1 4	
C.—Gas, Victualling Yards at Home - -	1,070 - -	784 1 5	285 18 7	-	-	-
D.—Contingencies, Victualling Yards at Home -	511 - -	661 2 4	- - -	-	150 2 4	
E.—Wages to Artificers, &c., Victualling Yards at Home.	34,534 - -	33,397 6 5	1,136 13 7	-	-	-
F.—Wages, &c., Victualling Yard Hoys, Victualling Yards at Home.	6,312 - -	6,295 7 1	16 12 11	-	-	-
G.—Wages, Police Force, Victualling Yards at Home.	4,985 - -	4,947 4 2	37 15 10	-	-	-
H.—Salaries and Allowances, Victualling Yards Abroad.	5,729 - -	5,925 11 10	- - -	-	196 11 10	
I.—Rents, Water, &c., Victualling Yards Abroad	50 - -	437 10 8	- - -	-	387 10 8	
K.—Gas, Victualling Yards Abroad - - -	115 - -	91 12 7	23 7 5	-	-	-
L.—Contingencies, Victualling Yards Abroad -	219 - -	203 - 6	15 19 6	-	-	-
M.—Wages to Artificers, &c., Victualling Yards Abroad.	6,652 - -	6,255 5 1	396 14 11	-	-	-
N.—Extra Pay to Artificers, &c. of the Fleet employed in Victualling Yards at Home and Abroad.	150 - -	115 19 -	34 1 -	-	-	-
	75,548 - -	74,339 1 7	1,996 4 7		787 6 2	
	74,339 1 7		787 6 2			
Net Surplus - - - £.	1,208 18 5	£.	1,208 18 5			



31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

Surplus: Arising from a Foreman performing (with an extra allowance) the duties of Master Cooper at Deptford, the vacancy, though provided for, not being filled up. The saving would have been greater but for additional clerical assistance required at Plymouth.

Deficit: Due to the expenditure for Water at the Royal Victoria Yard being more than was anticipated. Sanctioned by Treasury Letter of 11th March 1876.\*

Surplus: Due to the actual expenditure having fallen considerably short of the Estimate, principally at Deptford.

Deficit: Mainly arising from the requirements of the Service for Travelling Expenses and contingencies at the Royal Victoria and Royal William Yards having exceeded the Estimate.

Surplus: From the actual requirements of the Service having fallen short of the Estimate.

Surplus: Slight variations at the several Yards.

Surplus: Arising from the expenditure at the Royal Victoria Yard, for a portion of the year, having been slightly under the Estimate.

Deficit: Arising from the Paymaster in charge of Stores at Jamaica becoming entitled to a higher rate of Sea Pay under the Regulations; from increased Pay to Writers at the Cape of Good Hope and Esquimalt; from increased Lodging Allowance at Malta not provided for; and from a temporary Lodging Allowance at Halifax not foreseen when the Estimate was framed.

Deficit: Arising from payment of rent (including arrears) at Yokohama, not provided for until 1876-77.

Surplus: Difference between an Estimated and Actual Expenditure.

Surplus: Slight variations at the several Yards.

Surplus: From the actual requirements of the Service having fallen short of the Estimate.

Surplus: Requirements of the Service less than anticipated.

\* Copies of Application made to Treasury, and Treasury Reply thereto, appended (*see* pp. 22 and 23).

Account of the Sums Expended, compared with the Sums Granted, for Navy Services, in the Year ended

SERVICE.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.			
			More than Granted.		Less than Granted.	
VOTE No. 8.						
MEDICAL ESTABLISHMENTS AT HOME AND ABROAD:	£. s. d.	£. s. d.	£. s. d.		£. s. d.	
A.—Salaries and Allowances, Medical Establishments at Home.	15,540 - -	15,708 10 8	- - -		168 10 8	
B.—Rents, Water, &c., Medical Establishments at Home.	774 - -	732 16 7	41 3 5		- - -	
C.—Gas, Medical Establishments at Home	1,200 - -	1,099 18 4	100 1 8		- - -	
D.—Contingencies, Medical Establishments at Home.	738 - -	1,030 16 10	- - -		292 16 10	
E.—Wages, &c., Medical Establishments at Home	14,294 - -	14,797 5 9	- - -		503 5 9	
F.—Wages, &c., Police Force, Medical Establishments at Home.	2,325 - -	2,302 18 -	22 2 -		- - -	
G.—Salaries and Allowances, Medical Establishments Abroad.	11,224 - -	11,570 5 7	- - -		346 5 7	
H.—Rents, Water, &c., Medical Establishments Abroad.	321 - -	275 11 11	45 8 1		- - -	
I.—Gas, Medical Establishments Abroad	430 - -	351 15 9	78 4 3		- - -	
K.—Contingencies, Medical Establishments Abroad.	485 - -	480 17 1	4 2 11		- - -	
L.—Wages, &c., Medical Establishments Abroad	6,330 - -	6,100 1 -	229 19 -		- - -	
M.—Wages, &c. Police Force, Medical Establishments Abroad.	315 - -	291 18 6	23 1 6		- - -	
N.—Salaries and Allowances, Marine Infirmaries	6,682 - -	6,672 9 8	9 10 4		- - -	
Carried forward - - - £.	60,658 - -	61,415 5 8	553 13 2		1,310 18 10	

31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

Deficit: Arising from the promotion of the Deputy Inspector General in charge of the Hospital at Yarmouth to the rank of Inspector General, and his continued employment instead of his being placed on Half-pay; and from overlapping of time and increased pay through change of Officer borne on Ship's Books for Service at Portland: reduced by a net saving at other Establishments, owing to changes of Officers and to the vacancy for a Fourth Surgeon at Plymouth continuing to be temporarily filled by a Staff Surgeon on Sea Pay.

Surplus: Mainly arising from the actual payments within the year for Water having been less than anticipated.

Surplus: Difference between Estimated and Actual Expenditure.

Deficit: Owing to the payments for Funeral Expenses and contingencies having exceeded the amount anticipated. The provision in the Estimates 1876-77 has been somewhat increased.

Deficit: Due to the hire of additional Nurses, Labourers, and Washers, &c., to meet the exigencies of the Service.

Surplus: There is a slight saving at Plymouth.

Deficit: Caused by increased Rates of Pay, and overlapping of time, for which pay is due, through changes of Officers, &c. at some Establishments; reduced by a saving through changes at Jamaica, and vacancy for Dispenser at the Cape of Good Hope.

Surplus: Owing to the requirements for Water at Lisbon, and Rent at Yokohama, being less than anticipated.

Surplus: Difference between Estimated and Actual Expenditure.

Surplus: Requirements of the Establishments, in the aggregate, slightly under the Estimate.

Surplus: Mainly owing to a less number of Nurses, Washers, &c., being required at Malta and Hong Kong than estimated for; reduced by small excesses at other Establishments.

Surplus: The requirements have been less than anticipated.

Surplus: Arising from changes of Officers.

ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services, in the Year ended

S E R V I C E.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.	
			Less than Granted.	More than Granted.
VOTE No. 8—continued.				
MEDICAL ESTABLISHMENTS AT HOME AND ABROAD— continued.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Brought forward - - -	60,658 - -	61,415 5 8	553 13 2	1,310 18 10
O.—Rents, Water, &c., Marine Infirmaries -	22 - -	19 4 -	2 16 -	- - -
P.—Gas, Marine Infirmaries - - - -	100 - -	79 19 10	20 - 2	- - -
Q.—Contingencies, Marine Infirmaries - -	360 - -	304 11 4	55 8 8	- - -
R.—Wages, &c., Marine Infirmaries - - -	2,824 - -	2,822 4 10	1 15 2	- - -
S.—Wages, &c., Police Force, Marine Infirmaries	430 - -	430 5 -	- - -	- 5 -
T.—Extra Pay to Officers, Seamen, and Marines employed in Medical Establishments at Home and Abroad.	250 - -	122 4 7	127 15 5	- - -
£.	64,644 - -	65,193 15 3	761 8 7	1,311 3 10
		64,644 - -		761 8 7
Net Deficit - - - £.		549 15 3	£.	549 15 3
VOTE No. 9.				
MARINE DIVISIONS:				
A.—Salaries and Allowances, Marine Divisions -	7,203 - -	7,723 9 6	- - -	520 9 6
B.—Rents, Water, &c., Marine Divisions - -	4,400 - -	3,505 - -	895 - -	- - -
C.—Gas, Marine Divisions - - - -	4,400 - -	4,239 7 10	160 12 2	- - -
D.—Contributions and Grants in Aid, Marine Divisions.	680 - -	608 10 -	71 10 -	- - -
E.—Contingencies, Marine Divisions - -	2,185 - -	2,127 13 3	57 6 9	- - -
£.	18,868 - -	18,204 - 7	1,184 8 11	520 9 6
	18,204 - 7		520 9 6	
Net Surplus - - - £.	663 19 5	£.	663 19 5	



31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

Surplus: Slight variation from Estimate.

Surplus: Difference between Estimated and Actual Expenditure.

Surplus: Owing to the requirements of the Service having been less than anticipated.

Surplus: Slight variations at the several Infirmaries.

Deficit: Fractional difference.

Surplus: Requirements of the Service less than provided for, this item being intended to meet exigencies.

Deficit: Mainly arising from the Appointment of a Chaplain to Chatham not provided for, from grant of increased pay to Chaplains of the divisions generally (under Order in Council, 13 May 1875), and from change in mode of payment.

Surplus: Chiefly owing to Lodging Allowances for Lady Quarter, 1876, not having been paid till the subsequent Quarter, under misapprehension of the instructions. In the case of Plymouth, the saving is partly caused by increased Barrack Accommodation being found for the Officers, &c., and there is a net saving on the general provision for Water.

Surplus: Being the difference between the Estimated and Actual Expenditure.

Surplus: Owing to the payments for Lady Quarter, 1876, having been in most cases made in the subsequent Quarter.

Surplus: The actual requirements having fallen short of the anticipations.

Account of the Sums Expended, compared with the Sums Granted, for Navy Services, in the Year ended

SERVICE.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.			
			Less than Granted.		More than Granted.	
VOTE No. 10.—SECTION I. NAVAL STORES.	£. s. d.	£. s. d.	£. s. d.		£. s. d.	
A.—Timber, Masts, Deals, &c. - - - -	170,000 - -	169,391 7 7	608 12 5	-	-	-
B.—Metals and Metal Articles, including Iron Armour Plates, Iron Beams, and Iron Masts.	500,000 - -	396,539 13 9	103,460 6 3	-	-	-
C.—Coals and other Fuel for Steam Vessels and Dockyard purposes.*	184,700 - -	199,044 17 4	- - -	-	14,344 17 4	
D.—Hemp, Canvas, &c. - - - -	141,000 - -	141,647 16 4	- - -	-	647 16 4	
E.—Paint Materials, Oils, Pitch, Tar, Tallow, and other Miscellaneous Articles.*	168,570 - -	177,661 11 9	- - -	-	9,091 11 9	
F.—Freight and sundry Expenses connected with Naval Stores.	10,000 - -	13,073 16 1	- - -	-	3,073 16 1	
G.—Purchases by Officers of Ships, Foreign Yards, and Coast Guard.*	111,500 - -	172,689 6 4	- - -	-	61,189 6 4	
	£. 1,285,770 - -	1,270,048 9 2	104,068 18 8		88,347 7 10	
	1,270,048 9 2		88,347 7 10			
Net Surplus - - - £.	15,721 10 10	£.	15,721 10 10			

\* Including Supplementary Estimate.

(C.)

Sir,

20 March 1876.

I AM commanded by my Lords Commissioners of the Admiralty, to acquaint you, for the information of the Lords Commissioners of the Treasury, that it is expected that there will be a deficit on Sub-Head E., Vote No. 10, Section 1, of about 7,500 £., caused by the necessity of providing additional boats and miscellaneous stores, &c.; on Sub-Head F., of 2,000 £., owing to the increased quantity of stores shipped to foreign stations; and on Sub-Head G., of 46,000 £., in consequence of the movements of the Detached Squadron, &c., in connection of the visit of His Royal Highness the Prince of Wales to India, and the Strike in South Wales, which necessitated the local purchase of coal at Zanzibar, and other places, &c. It is also expected that there will be a saving on Sub-Head B., Metals, of more than sufficient to meet the deficiencies on Sub-Heads E., F., and G., as stated above. This saving on Sub-Head B. arises chiefly from inability to make the demands for a large portion of the armour of the "Inflexible," and for large quantities of steel plates for ship-building, and for iron plates for ship-building and boiler work, in sufficient time to admit of the articles being manufactured and delivered in time for receipt and payment during this financial year, and also from the Admiralty being enabled to use up stocks of brass tubes to a larger extent than was anticipated, and thus to obviate the necessity for purchases.

2. Under these circumstances I am to request that you will move the Lords Commissioners of Her Majesty's Treasury to sanction the transfer of 55,500 £. from Sub-Head B. to Sub-Heads E., F., and G. of Vote 10, Section 1, as follows:—

	£.
From B. to E. - - - -	7,500
From B. to F. - - - -	2,000
From B. to G. - - - -	46,000
Total transfer from B. - - - £.	55,500

The Secretary to the Treasury.

I am, &c.  
(signed) Robert Hall.

31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

Surplus: Being the difference between the Estimated and Actual Cost.

Surplus: 1. Arising from less quantities of armour-plates, steel plates for ship-building, and iron plates for ship-building and boiler-work having been required during the financial year, 1875-76, than appeared probable at the time of preparing the Estimates. 2. From the Admiralty being enabled to utilise stocks of brass tubes on hand to a larger extent than was anticipated, thus obviating the necessity for purchases to the extent which would otherwise have been necessary. 3. From deliveries by contractors not having been so far advanced at the close of the year as was expected; and, 4. From the repayments for supplies made to other Departments, &c. having exceeded the amount anticipated.

Deficit: Arising chiefly from repayments for supplies to other Departments having fallen short of the amount expected.

Deficit: Sanctioned, to the extent of 7,500*l.*, by Treasury letter of 13th April 1876 † (to be met out of Surplus on Sub-Head B., "Metals.") It was afterwards found on finally closing the accounts that the purchases somewhat exceeded this amount.

Deficit: Arising from increased shipments of Stores abroad (especially Malta), and also from the Cost of Freight of two Steam Launches (500 *l.*), and some Machinery having been charged to Vote 10, Section 1, but which had not been provided for; in future, similar expense will be provided for under the Vote from which the Cost of Machinery is paid. Excess sanctioned to the extent of 2,000 *l.* by Treasury letter, 13th April 1876 † (to be met out of Surplus on Sub-Head B., "Metals".)

Deficit: In consequence of the movements of the Detached Squadron in connection with the Prince of Wales' Visit to India, and the Strike in South Wales, which necessitated the local purchase of coal at Zanzibar and other places. The Treasury on the 13th April last † sanctioned the transfer of 46,000 *l.* from Sub-Head B. (which amount it was then expected would be sufficient to cover the deficit on Sub-Head G.) The actual deficit is 15,000 *l.* in excess of the anticipated amount, but owing to the distance from England at which these purchases (principally coal) were made, and the time that must necessarily elapse before advices could be received, it was impossible then to foresee the extent of liabilities under this Sub-Head.

† Copies of Application made to Treasury, and Treasury Reply thereto, appended (*see below*).

Sir,

Treasury Chambers, 13 April 1876.

I HAVE laid before the Lords Commissioners of Her Majesty's Treasury your letter of the 20th ultimo, as to the deficiencies that are expected to occur on certain Sub-Heads of Vote No. 10, Section 1, of the Navy Estimates for 1875-76; and I am to state, for the information of the Lords Commissioners of the Admiralty, that my Lords sanction the transfer of the sum of 55,500 *l.* from Sub-Head B., Vote 10, Part 1, to provide for the deficiencies on the following Sub-Heads of the same Vote, as stated in your letter, viz.:—

	£.
Sub-head E., Paint, &c. - - - -	7,500
Sub-head F., Freight - - - -	2,000
Sub-head G., Purchases Abroad - - -	46,000
	<hr/>
	£. 55,500

I am to add that my Lords presume that, as stated in the account forwarded in Mr. Egerton's letter of the 25th January last, the Board of Admiralty still anticipate a surplus on Vote 10, Section 1, to the extent of 29,000 *l.*

The Secretary of the Admiralty.

I am, &c.  
(signed) William Law.

ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services, in the Year ended

SERVICE.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.			
			Less than Granted.		More than Granted.	
	£. s. d.	£. s. d.	£. s. d.		£. s. d.	
VOTE No. 10.—SECTION II.						
STEAM MACHINERY AND SHIPS BUILT BY CONTRACT:						
A.—Steam Machinery for Her Majesty's Ships and Vessels.	447,345 - -	445,190 8 5	2,154 11 7	-	-	-
B.—Ships, &c., Building by Contract - -	382,083 - -	382,076 12 7	6 7 5	-	-	-
C.—Steam Boats to be ordered - - -	5,500 - -	5,500 - -	—		—	
D.—Experimental Purposes, Sundries, and Con- tingencies.	5,000 - -	5,694 9 10	- - -		694 9 10	
E.—Repairs of Ships at other than Her Majesty's Dockyards.	* 26,000 - -	36,228 11 -	- - -		10,228 11 -	
F.—Salaries, Pay, Subsistence, &c., of Officers, &c., superintending Ships Building by Contract, and other Works.	9,000 - -	14,736 9 9	- - -		5,736 9	
G.—For Special Gun Carriages, &c. - -	13,680 - -	13,680 - -	—		—	
H.—Breaking up Ships - - - -	15,000 - -	10,568 10 10	4,431 9 2	-	-	-
	£. * 903,608 - -	913,675 2 5	6,592 8 2		16,659 10 7	
		903,608 - -			6,592 8 2	
Net Deficit - - - £.		10,067 2 5	£.		10,067 2 5	

\* Including Supplementary Estimate.



31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued.*

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

Surplus: Arising from the contract with the Yorkshire Engine Company for a set of Engines on Mr. Perkins' plan for "Pelican" having been cancelled, and the amounts paid to them thereunder having been ordered to be refunded, less 2,745 £. the value of parts of machinery taken over by the Admiralty.

Surplus: Fractional difference.

Deficit: Mainly due to the expenses incurred by Mr. Froude, connected with resistance of moving bodies in fluids, and to the cost of Wilde's Electric Lights being greater than had been anticipated.

Deficit: Mainly due to the large amount of works undertaken upon Coastguard Drill Ships, and Tenders by Contract, owing to the pressure of work on Her Majesty's Yards preventing its being performed therein. The expenditure under this item occurs in all parts of the world, and from its nature it is impossible to estimate it beforehand with accuracy, or to control it.

Deficit: Owing to the actual requirements of the year being in excess of the Estimate; due in great measure to two Sloops, six Gunboats of "Mallard" class, and six River Service Gunboats having been ordered in excess of the Programme for 1875-76. The provision for this Service in the Estimates, 1876-77, has been largely increased.

Surplus: Caused by the pressure of other works in Her Majesty's Yards having prevented the employment of as many men as had been intended in breaking up Ships.

Account of the Sums Expended, compared with the Sums Granted, for Navy Services, in the Year ended

SERVICE.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.	
			Less than Granted.	More than Granted.
VOTE No. 11.				
NEW WORKS, BUILDINGS, MA- CHINERY, AND REPAIRS:	£. s. d.	£. s. d.	£. s. d.	£. s.
A.—New Works, &c., Chatham - - - -	94,900 - -	94,082 - 4	817 19 8	-
Carried forward - - - £.	94,900 - -	94,082 - 4	817 19 8	-

31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

		£.	s.	d.	
Surpluses: Arising on the following Items:					
Extension of the Yard	- - - - -	1,945	-	-	Owing to failure of Contractors to deliver Portland Cement ordered.
Interest on outlay for Branch Railway into Yard		1,256	-	-	The works are unfinished, hence but a small sum could be paid for interest.
Turret Clock for New Yard	- - - - -	550	-	-	Due to the non-delivery of the Clock ordered.
Other Works under 500 l. each	- - - - -	128	-	-	By Savings effected on the Estimates.
		3,879	-	-	
Reduced by Deficits on—	£. s. d.				
Machinery Shop at head of Docks, No. 7 and 8.	631 - -	-	-	-	Due to hastening the completion of the Shop this year, instead of postponing it as intended until 1876-77.
Roadway for Steam Travellers, Dock No. 7.	1,129 - -	-	-	-	Caused by the expenditure in 1874-75 having fallen short of the expectations, hence this excess in the following year.
Repairs and Maintenance of Buildings.	473 - -	-	-	-	Due to an unusual expenditure on roads and paving, especially in connection with the launch of the "Alexandra."
Laying on Water from Saw-mills Well to Yard.	169 - -	-	-	-	To prevent deterioration to Boilers by bad Water.
		2,402	-	-	
		1,477	-	-	
The difference remaining as Surplus	- - - - -	6	13	8	Small variations on the remaining Services.
Surplus on Works	- - - £.	1,483	13	8	
Add Surpluses on—					
New Machinery made in the Yard	- - - - -	1,052	-	2	The net deficit on the Machinery items arises from Machinery requiring to be purchased which was not provided for in the Estimates, and from the payment of the balance on a Contract for Pumping Machinery, which, when the Estimates for 1875-76 were framed, there was reason to expect might be paid within the year 1874-75, after abating savings effected on Machinery made in the Yard, and on the item for Repairs.
Repairs to Plant and Machinery	- - - - -	388	14	11	
		2,924	8	9	
Less, Deficit on—					
New Machinery purchased	- - - - -	2,106	9	1	
Net Surplus on Works and Machinery	- £.	817	19	8	

Account of the Sums Expended, compared with the Sums Granted, for Navy Services, in the Year ended

SERVICE.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.					
			Less than Granted.			More than Granted.		
VOTE No. 11—continued.								
NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS—continued.	£. s. d.	£. s. d.	£. s. d.	£. s. d.				
Brought forward - - -	94,900 - -	94,082 - 4	817 19 8	-				
B.—New Works, &c., Sheerness - - -	18,250 - -	17,048 9 3	1,201 10 9	-				
C.—New Works, &c., Portsmouth - - -	229,645 - -	218,150 5 5	11,494 14 7	-				
Carried forward - - - £.	342,795 - -	329,280 15 -	13,514 5 -	-				



31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

			£.	s.	d.	
Surpluses: Arising on the following Items:						
New Machinery purchased	-	-	-	1,530	-	-
New Machinery made in the Yard	-	-	-	26	5	6
Repairs to Plant and Machinery	-	-	-	33	1	10
Surplus on Machinery			-	1,589	7	4
Reduced by Deficits on—			£.	s.	d.	
Repairs and Maintenance of Buildings.			476	-	-	-
Repairs and Maintenance of Caissons.			206	-	-	-
			682	-	-	
Less, Surpluses on—			£.			
New Caisson at Great Basin Entrance.	183		-	-	-	-
Other Works under 500 l. each.	97		-	-	-	-
			280	-	-	
			402	-	-	
The difference remaining as Surplus			14	3	5	-
Deficit on Works			-	-	-	387 16 7
Net Surplus on Works and Machinery			-	£.	1,201	10 9
Surpluses: Arising on the following Items:						
Extension of the Yard	-	-	-	4,656	-	-
Staging to Dock No. 13, for "Inflexible"	-	-	-	2,874	-	-
			415	-	-	
Alterations and renewals at Slips	-	-	-	1,450	-	-
Alterations in Armour-plate Shop	-	-	-	1,304	-	-
New Zincing Shop	-	-	-	631	-	-
Extension of erecting Shop on West Side of Factory.				11,330	-	-
Reduced by Deficits on—			£.	s.	d.	
Dredging in the Harbour	-	-	163	-	-	-
Extension of Foundry, Pattern Shop.			67	-	-	-
Repairs and Maintenance of Buildings.			209	-	-	-
			439	-	-	
			10,891	-	-	
The difference remaining as Deficit			-	23	1	7
Surplus on Works			-	£.	10,867	18 5
Add,—Surplus on—						
New Machinery purchased	-	-	-	1,546	1	-
			12,413	19	5	
Less, Deficits on—			£.	s.	d.	
New Machinery made in the Yard			282	12	-	-
Repairs to Plant and Machinery			636	12	10	-
			919	4	10	
Net Surplus on Works and Machinery			-	£.	11,494	14 7



March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

			£.	s.	d.	
Deficits: Arising on the following Items:						
Devonport:						
New Machinery made in the Yard	-	-	367	3	5	
Repairs to Plant and Machinery	-	-	1,639	4	2	
Keyham:						
New Machinery purchased	-	-	740	-	-	
Reduced by Surpluses on—			2,746	7	7	
Devonport:			£.	s.	d.	
New Machinery purchased	-	1,180	-	-		
Keyham:						
New Machinery made in the Yard.	212	1	9			
Repairs to Plant and Machinery	109	4	2			
			1,501	5	11	
Deficit on Machinery			1,245	1	8	
Reduced by Surpluses on the following Items:						
Devonport:						
Reconstructing entrance of Dock, No. 4.	952	-	-	-	-	This work is unfinished.
Other Works under 500 £. each	156	-	-	-	-	Partly by savings effected, and partly by the non-delivery of iron stanchions when ordered.
Keyham:						
Construction of a Pontoon for Docking Ships of 1,000 tons and under.	2,034	-	-	-	-	The contractors failed to deliver the pontoon by the time intended.
Interest on outlay for Branch Line of Railway into Yard.	247	-	-	-	-	The Railway Company had not completed the additional services.
Lengthening Dock, No. 2	90	-	-	-	-	Saving on the Estimate.
			3,479	-	-	
Reduced by Deficits on—						
Keyham:			£.			
Alterations to Caissons C. and G.	235	-	-	-	-	Caused by the alterations being found on docking to be more than estimated.
Continuation of Granite Pitch Paving in Roadways.	1,999	-	-	-	-	In continuation of work very much required, this expenditure was incurred to save increasing the amount for 1876-77.
Repairs and Maintenance of Buildings.	256	-	-	-	-	Caused by the casualties being more than contemplated.
Repair of Factory Smoke Towers.	844	-	-	-	-	As the smoke towers gave indications of weakness, immediate action became necessary.
			3,334	-	-	
			145	-	-	
The Difference remaining as Deficit			5	19	7	Variations on the remaining items.
Surplus on Works			139	-	5	
Net Deficit on Works and Machinery			£.	1,106	1	3

\* Copies of Applications made to Treasury, and Treasury Replies thereto, appended (*see* pages 54 and 55).





31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

		£.	s.	d.	
Surpluses: Arising on the following Items:					
New Machinery purchased	- - -	450	-	-	The actual cost of the several machines was less than anticipated. Expenditure was not so great as anticipated.
New Machinery made in the Yard	- - -	228	18	9	
Repairs to Plant and Machinery	- - -	312	13	2	
Surplus on Machinery	- - - £.	991	11	11	
Reduced by Deficit on—		£.	s.	d.	
Repair and Maintenance of Buildings (including Hobb's Point).	1,021 - -	-	-	-	Sanctioned by Treasury Letter, 11th March 1876,* in part, and the remainder due to casualties being more than provided for.
Less—Surpluses on—	£.				
Foundations for Machinery	277 - -	-	-	-	Dependent on the requirements of the Machinery Department. Savings on the Estimates.
Other Works under 500 l. each.	124 - -	-	-	-	
Repairs and Maintenance of the Caissons.	100 - -	-	-	-	No repairs were required.
	501 - -				
	520 - -				
The difference remaining as Deficit.	9 - 11	-	-	-	Small variations on several items.
Deficit on Works	- - -	520	-	11	
Net Surplus on Works and Machinery	- £.	462	11	-	
Surpluses: Arising on the following Items:					
Extension of the Yard	- - -	6,914	-	-	The progress made by convict labour was less rapid than contemplated, and the supply of materials also fell short of anticipations.
Repairs and Maintenance of Buildings	- - -	83	-	-	
		6,997	-	-	Savings: the casualties were within the Estimate.
Reduced by Deficit on—					
Other Works under 500 l. each	- - -	180	-	-	Caused by a deviation in the arrangement in order to give increased accommodation.
		6,817	-	-	
The Difference remaining as Surplus	- - -	-	18	5	Small variations.
Surplus on Works	- - - £.	6,817	18	5	
Reduced by Deficits on—					
Repairs to Plant and Machinery	- - -	6	17	6	Repairs, which were not anticipated when the Estimates were framed, were found necessary to this extent.
Net Surplus on Works and Machinery	- £.	6,811	-	11	

\* Copies of Application made to Treasury, and Treasury Reply thereto, appended (*see* page 55).



1 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

	£.	s.	d.	
Surpluses: Arising on the following Items:				
Portland:				
Permanent Lighthouse on Breakwater - - -	645	-	-	This service is incomplete.
Interest on Outlay for Branch Line of Railway to Breakwater Pier from Castletown Railway.	343	-	-	The Railway is unfinished.
Protecting and Improving the Harbour - - -	435	-	-	Due to deferring work awaiting result of the measures adopted for preventing the encroachments of the sea.
Repairs and Maintenance of Buildings, including Breakwater.	396	-	-	Casualties were less than anticipated.
	1,819	-	-	
Reduced by Deficit on:				
Alderney:				
Restoring Damages, and Repairs and Maintenance.	140	-	-	The casualties were in excess of the provision.
	1,679	-	-	
The difference remaining as Deficit - - -	-	11	5	Small variations on items.
Surplus on Works - - - £.	1,678	8	7	
Id,—Surplus on—				
Portland:				
Repairs to Plant and Machinery - - -	16	4	-	Less work executed than was estimated for.
Net Surplus on Works and Machinery - £.	1,694	12	7	
Surplus: Variations on the Services.				
Surpluses: Arising on the following Items:				
Royal Victoria Yard:				
Foundations for Machinery - - -	117	-	-	Dependent on the machinery.
Repairs and Maintenance of Buildings - - -	236	-	-	The casualties were less than provided for.
Royal Clarence Yard:				
Repairs and Maintenance of Buildings - - -	204	-	-	
	557	-	-	
The difference remaining as Deficit - - -	48	7	4	Variations on several services.
Surplus on Works - - - £.	508	12	8	
Id,—Surpluses on—				
Royal Victoria:	£.	s.	d.	
Repairs to Machinery - - -	105	2	5	
Less,—Deficit on New Machinery Purchased.	88	15	-	
	16	7	5	The savings effected on the provision for repairs somewhat exceeded the excess, caused by the purchase of an engine and boiler for sewing machine, not provided for.
Royal Clarence:				
Repairs to Plant and Machinery - - -	63	10	9	Some portions of the machinery required less repair than was anticipated.
Royal William:				
New Machinery made in the Yard - - -	42	16	9	Less work executed than estimated for.
Repairs to Plant and Machinery - - -	4	-	6	Fractional difference.
Net Surplus on Works and Machinery - £.	635	8	1	





March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued.*

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

		£.	s.	d.	
Surpluses on the following Items:					
Chatham:					
Repairs and Maintenance of Buildings	- -	226	-	-	The casual repairs were less than estimated.
Haslar:					
Other Works under 500 £. each	- - -	168	-	-	} Savings on the estimated amounts.
Plymouth:					
Works under 500 £. each	- - -	111	-	-	
		505	-	-	
The difference remaining as Surplus	- -	9	-	7	Small variations on several items.
Surplus on Works	- - - £.	514	-	7	
Reduced by Deficits on—					
Haslar:		£.	s.	d.	
Machinery made in the Yard	-	792	9	5	} The sum of 700 £. was provided for the purchase of two new Boilers for Haslar. It was subsequently decided that the Boilers should be made in the Yard. (See Remark under "Repairs.")
Less, Surplus on "Machinery to be Purchased."		700	-	-	
	£.	92	9	5	
Haslar:					
Repairs to Plant and Machinery		212	16	5	} Owing to certain Materials returned into Store (valued at 305 £.) not having been found sufficiently serviceable to admit of their value being charged to Vote 10, and credited to Vote 11. There would otherwise have been a small surplus about equal to the net deficit on the Machinery items above (92 £.)
		305	5	10	
Net Surplus on Works and Machinery	- £.	208	14	9	
Deficits: Arising on the following Items:					
Chatham:					
Repairs and Maintenance of Buildings	- -	185	-	-	Due to special repairs to Drains, and alterations to Latrines; also new Latrines at Schools urgently required.
Forton:					
Other Works under 500 £. each	- - -	137	-	-	} Caused by employing Civil Labour, owing to the paucity of Marines.
Repairs and Maintenance of Buildings	- -	208	-	-	
Plymouth:					
New Drill Shed	- - -	1,845	-	-	Sanctioned by Treasury Letter, 6th November 1875.*
Walmer:					
Repairs and Maintenance of Buildings	- -	184	-	-	} Due to repairs to residences on change of occupancy; also gas fittings, &c., provided in Official Residences not included in Estimates.
		2,559	-	-	
Reduced by Surpluses on—					
Forton:		£.	s.	d.	
New Ship Practice Battery	-	173	-	-	} Savings on the Estimates.
Eastney:					
Repairs and Maintenance of Buildings.		127	-	-	
Walmer:					
Works under 500 £. each	- -	163	-	-	} One service was postponed, and other savings were effected.
		463	-	-	
		2,096	-	-	
The difference remaining as Surplus	- -	6	10	8	Small variations on several items.
Deficit on Works	- - - £.	2,089	9	4	
Add—Deficit on—					
Forton:		£.	s.	d.	
Repairs to Plant and Machinery		2	16	11	} Fractional differences.
Less, Fractional Saving on other Items.		-	2	7	
		2	14	4	
Net Deficit on Works and Machinery	- £.	2,092	3	8	

\* Copies of Application made to Treasury, and Treasury Reply thereto, appended (see pages 55 and 56).

ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services, in the Year ended

SERVICE.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.					
			Less than Granted.			More than Granted.		
VOTE No. 11—continued.								
NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS—continued.	£.   s.   d.	£.   s.   d.	£.   s.   d.	£.   s.   d.	£.   s.   d.	£.   s.   d.	£.   s.   d.	
Brought forward - - -	500,481 - -	480,342 - 6	23,337 4 5			3,198 4		
M.—New Works, &c., Coast Guard - - -	25,000 - -	30,924 6 2	- -			5,924 6		
N.—Repairs, &c., at the Admiralty Offices, Whitehall	10,000 - -	10,034 4 2	- -			34 4		
O.—New Works, &c., Naval College - - -	7,500 - -	7,890 6 7	109 13 5			- -		
P.—New Works, &c., Naval Establishments Abroad	71,540 - -	67,166 11 8	4,373 8 4			- -		

31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

	£.	s.	d.	
Deficit on the following Items:				
Purchase and erection of Buildings - -	1,642	6	4	} Due to greater progress made with the new buildings under contract than expected, and to more extensive repairs of buildings generally, thus bringing unanticipated payments into the Financial Year. The expenditure also includes payments made to other Departments for work performed, not expected to be brought to account within the year.
Repairs and Maintenance of Buildings - -	4,281	19	10	
Total Deficit - - - £.	5,924	6	2	
<hr/>				
Deficit - - - - -	-	-	-	Small variation between Estimate and Expenditure.
<hr/>				
Surplus - - - - -	-	-	-	Savings effected in executing the several works.
<hr/>				
Surpluses on the following Items:				
Gibraltar:				
Foundation for Machinery - - - -	176	-	-	} Dependent on the machinery delivered. Savings effected by an alteration in the proposals.
Other Works under 500 l. each - - -	175	-	-	
Malta:				
Drainage - - - - -	3,922	-	-	} The claim from War Department was received too late to be brought to account this year. Deferred; the machinery not having been delivered.
Foundations for Machinery - - - -	775	-	-	
Bermuda:				
Additional Fender Piers - - - -	710	-	-	} These services are unfinished, chiefly owing to the scarcity of labour. Work has been executed so far as the machinery received will admit. The services are incomplete. Casualties were less than contemplated.
Strengthening Wharf Wall - - - -	362	-	-	
Foundations for Machinery - - - -	471	-	-	
Other Works under 500 l. each - - -	268	-	-	
Repairs and Maintenance of Buildings - -	230	-	-	
Halifax:				
Other Works under 500 l. each - - -	369	-	-	By deferring one service.
Ascension:				
New Barracks for Seamen - - - -	650	-	-	} These services have been postponed.
Other Works under 500 l. each - - -	200	-	-	
Esquimalt:				
Foundations for Machinery - - - -	200	-	-	Dependent on the machinery provided.
Cape of Good Hope:				
Extension of Fresh Water Tank - - -	259	-	-	} Works incomplete; due to the scarcity of labour.
Renewing Roofs of Yard Officers' Houses -	501	-	-	
Other Works under 500 l. each - - -	107	-	-	
Hong Kong and Kowloon:				
Repairs and Maintenance of Buildings - -	121	-	-	The casual repairs were within the provision.
Carried forward - - - - £.	9,496	-	-	

ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services, in the Year ended

SERVICE.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.			
			Less than Granted.		More than Granted.	
VOTE No. 11—continued.						
NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS—continued.	£. s. d.	£. s. d.	£. s. d.		£. s. d.	
Brought forward - - -	614,521 - -	595,857 9 1	27,820 6 2		9,156 15 3	
P.—New Works, &c., Naval Establishments Abroad —continued.						
Carried forward - - - £.	614,521 - -	595,857 9 1	27,820 6 2		9,156 15 3	



31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

		£.	s.	d.	
Surplus brought forward - - -		9,496	-	-	
Shanghai:					
Repairs and Maintenance of Buildings - - -		256	-	-	
Yokohama:					
Repairs and Maintenance of Buildings - - -		343	-	-	} The casual repairs were within the provision.
Reduced by Deficits on—		10,095	-	-	
Gibraltar:	£. s. d.				
Repairs and Maintenance of Buildings.	666 - -	-	-	-	Caused by making good damages after a storm, 25th November 1875.
Malta:					
Workshop in connection with Somerset Dock.	202 - -	-	-	-	Due to the cost of foundations being in excess of the provision.
Bermuda:					
Dredging Basin and Harbour -	1,985 - -	-	-	-	Caused by purchasing on the spot a steam tug, which was not contemplated. An opportunity which was not likely to occur again.
Pay of Officers, Crew, and Artificers employed on Works, &c., borne on the books of H. M. S. "Terror."	184 - -	-	-	-	Due to increased rates of Pay through length of service, &c., and to the employment of more men than were provided for. The deficit would have been greater but for a saving consequent on the non-employment of a Navigating Lieutenant whose pay was included in the provision made.
Machine Shop for repairing iron Ships.	875 - -	-	-	-	Due to completing this building for which provision was made in former years.
Halifax:					
Repairs and Maintenance of Buildings.	446 - -	-	-	-	Caused by executing additional repairs to buildings.
Jamaica:					
Repairs and Maintenance of Buildings.	183 - -	-	-	-	Casualties exceeded the provision made.
Esquimaux:					
Repairs and Maintenance of Buildings.	389 - -	-	-	-	} - - ditto - - ditto.
Trincomalee:					
Repairs and Maintenance of Buildings.	112 - -	-	-	-	
Hong Kong and Kowloon:					
Restoring buildings damaged by Typhoon.	226 - -	-	-	-	Caused by additional work being performed.
Shanghai:					
Reconstructing Wharf No. 1 -	1,902 - -	-	-	-	Sanctioned by Treasury Letter, dated 11th December 1875.*
		7,170	-	-	
		2,925	-	-	
The difference remaining as Deficit - - -		11	5	9	Small variations on several items.
Surplus on Works - - - £.		2,913	14	3	
Add Surpluses on—					
Malta:					
New Machinery purchased - - -		902	-	-	} Caused partly by the actual cost of machines being less than estimated, and partly by two machines not having been delivered in time to allow of payment being made in the financial year.
New Machinery made in the Yard -	- - -	200	-	-	
Repairs to Plant and Machinery -	- - -	81	-	-	} The work provided for could not be finished in the year.
Halifax:					
New Machinery purchased - - -		64	-	-	Caused by a condenser having been made at Portsmouth Yard, instead of purchasing it.
Bermuda:					
Repairs to Plant and Machinery - - -		28	-	-	The repairs were not so heavy as anticipated.
Carried forward - - - £.		4,188	14	3	

\* Copies of Application made to Treasury, and Treasury Reply thereto, appended (*see* page 56).



1 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

	£.	s.	d.	
Brought forward - - -	4,188	14	3	
Jamaica:				
Repairs to Plant and Machinery - - -	50	-	-	} No repairs were necessary.
Trincomalee:				
Repairs to Plant and Machinery - - -	50	-	-	
Hong Kong and Kowloon:				
Repairs to Plant and Machinery - - -	1,025	-	-	Mainly due to the repairs to machinery damaged by typhoon, which were provided for, not having been executed, owing to the new buildings for the factory not having been ready.
Esquimalt:				
New Machinery purchased - - - -	282	-	-	Actual cost of machines proved to be less than anticipated.
	5,595	14	3	
Deduct Deficits on—				
Gibraltar:	£.	s.	d.	
New Machinery purchased -	85	-	-	Caused by the difference between the estimated and actual cost of new machinery.
New Machinery made in the Yard.	2	-	-	} More work executed than was contemplated.
Repairs to Plant and Machinery	30	-	-	
Halifax:				
New Machinery made in the Yard.	330	-	-	More was expended at Portsmouth than expected in making a condenser originally intended to have been purchased (and so provided for), and work was done at Halifax in erecting machines, &c. which was unprovided for.
Repairs to Plant and Machinery	28	-	-	The repairs were rather heavier than anticipated.
Cape of Good Hope:				
Repairs to Plant and Machinery	41	-	-	The repairs were heavier than anticipated.
Bermuda:				
New Machinery purchased -	615	-	-	Caused by the difference between the estimated and actual cost of machines.
New Machinery made in the Yard	82	-	-	More work was accomplished than anticipated.
Esquimalt:				
Repairs to Machinery - - -	7	-	-	Repairs, not provided for, were found to be necessary to this extent.
	1,220	-	-	
	4,375	14	3	
Less,—Differences remaining as Deficit - -	2	5	11	Fractions.
Net Surplus on Works and Machinery - - - £.	4,373	8	4	
Surpluses:—Arising on the following Items:				
Cape of Good Hope:				
Renewing Roof of Victualling Stores - -	492	-	-	} Works incomplete, owing to the scarcity of labour.
Other Works under 500 l. each - - -	518	-	-	
Repairs and Maintenance of Buildings - -	138	-	-	
	1,148	-	-	
The difference remaining as Deficit - - -	8	4	6	Variations on the remaining services.
Net Surplus - - - £.	1,139	15	7	

ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services in the Year ended

SERVICE.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.			
			Less than Granted.		More than Granted.	
VOTE No. 11—continued.						
NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS—continued.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Brought forward - - -	616,781 - -	596,977 13 6	28,960 1 9		9,156 15	
R.—New Works, &c., Medical Establishments Abroad	3,470 - -	6,592 14 3	- - -		3,122 14	3



31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

Deficits: Arising on the following Items:		£.	s.	d.	
Esquimalt: Repairs and Maintenance of Buildings		104	—	—	Casualties exceeded provision made.
Yokohama: Conversion of Buildings at North Camp into Sick Quarters		3,656	—	—	Sanctioned by Treasury Letter, dated 15th February 1876.*
Reduced by Surpluses on—	£.	3,760	—	—	
Cape of Good Hope:					
Works under 500 l. each	109	—	—	—	} Due to the scarcity of labour.
Repairs and Maintenance of Buildings	376	—	—	—	
Yokohama: Repairs and Maintenance of Sick Quarters	154	—	—	—	Casualties were less than anticipated.
		639	—	—	
		3,121	—	—	
The difference remaining as Deficit		1	14	3	Small variations on several items.
Net Deficit	£.	3,122	14	3	
Surplus on Works, &c.		4	8	8	This item is expressly provided for any urgent Services that may arise during the year, and which are not foreseen at the time the Estimates are prepared. The sanction of the Treasury has been obtained to the expenditure charged to this head by letters dated 2nd September 1875, 15th November 1875, 15th February 1876, and 2nd May 1876, to the extent of 9,775 l.* the remainder being payments for works approved by the Treasury, 28th July 1876, and 16th October 1876,* and differences between estimated and actual expenditure.
Surplus on Machinery		926	9	3	The requirements of the year were not so great as was expected.
Total Surplus	£.	930	17	11	

Surplus arising out of a mistake by which provision was made for the same persons on Votes 3 and 11, their pay having been brought to account under the former Vote. Provision was also made for a larger number of temporary officers on the Works than the requirements of the service rendered it necessary to employ.

\* Copies of Applications made to Treasury, and Treasury Replies thereto, appended (see pages 56 to 63).

## ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services in the Year

(D.)

Sir,

Admiralty, 29 January 1876.

I AM commanded by my Lords Commissioners of the Admiralty to request that you will lay before the Lords Commissioners of the Treasury the following facts in regard to certain Expenditure which it has been considered desirable to incur at Devonport Dockyard in consequence of recommendations made by the Admiralty Committee on Boilers with a view to making improvements in the Dockyard Engines, and at the same time making them experimental trials to clear up obscure points in connection with the corrosion of boilers.

2. The following is the work referred to, viz.:—

1st. Making and fitting a wrought-iron Condenser, &c., to No. 1 Compound Engine at Keyham.

2nd. Making a high-pressure Cylindrical Boiler with tubes of various kinds of Iron and Steel, and iron-coppered, and fixing and mounting the boiler.

3rd. Making and fitting a cast-iron Condenser with brass tubes, &c., to No. 2 Compound Engine at Keyham.

3. The Devonport Officers have reported that the total cost of these various Services will be 3,120 £, of which it is proposed to spend 2,030 £ before the close of this financial year, and to complete the work early in the ensuing year.

4. Provision has been made in the Estimates, now being considered for the year 1876–77, for the balance which will fall upon it, but with regard to the 2,030 £ as no money has been specially voted to meet such an expenditure in the Estimates for this year, and as there is not a sufficient saving on the Sub-head of Vote 11, of which Devonport forms a portion, I am to request that you will move the Lords Commissioners of Her Majesty's Treasury to sanction the excess being met out of savings known to exist on the other portions of the same Vote.

The Secretary to the Treasury.

I am, &c.  
(signed) *Algernon Egerton.*

Sir,

Treasury Chambers, 3 February 1876.

WITH reference to your letter of the 29th ult., requesting the sanction of this Board to defray certain expenditure, which it is proposed to incur at Devonport Dockyard before the close of the present financial year, and which cannot be met out of Savings on the Sub-head of Vote 11 (of which Devonport forms a portion) from savings on other portions of the same Vote, I am directed by the Lords Commissioners of Her Majesty's Treasury to request that you will move their Lordships of the Admiralty to cause my Lords to be furnished with a statement of the probable Savings which are expected to arise on the Vote referred to.

The Secretary of the Admiralty.

I am, &c.  
(signed) *William Law.*

Sir,

Admiralty, 19 February 1876.

WITH reference to Mr. Law's letter of the 3rd instant, requesting information as to the probable Savings on Vote 11 of the Navy Estimates out of which it is proposed to meet certain expenditure for Machinery, estimated at 2,030 £, which it has been considered desirable to incur at Devonport Dockyard, I am commanded by my Lords Commissioners of the Admiralty to acquaint you, for the information of the Lords Commissioners of the Treasury, that when the Admiralty letter of the 29th ultimo was written it was anticipated that there would be, irrespective of the expenditure in question, a surplus of about 2,130 £ on the Machinery portion of Vote 11, spread over several Sub-heads as per Statement annexed, and that by arrangements subsequently made it is expected that this surplus may be increased by 3,300 £.

2. I am further directed by my Lords to state that this additional surplus of 3,300 £, now expected on the Machinery portion of Vote 11, is over and above the Surplus of 10,000 £ anticipated on that Vote in the Provisional Account of Naval Receipt and Expenditure forwarded to the Lords of the Treasury in Admiralty letter of 25th ultimo, which latter related to the Works and Buildings portion of the Vote only; and it is therefore proposed to apply the 3,300 £ to meet excesses on the aggregate Votes for the year 1875–76, and to expend the 2,030 £ in the manner suggested in my letter of 29th ultimo.

The Secretary to the Treasury.

I am, &c.  
(signed) *Algernon Egerton.*

STATEMENT of the SAVINGS and EXCESSES on the Machinery Portion of Vote 11, for 1875–76, anticipated at the date of writing Admiralty Letter to Treasury of 29th January 1876, S. 381–1018.

S U B - H E A D.						Saving.		Excess.	
						£.	s. d.	£.	s. d.
New Works, &c., Chatham	-	-	-	-	-	-	-	14	-
Ditto - - Portsmouth	-	-	-	-	-	-	-	432	10
Ditto - - Devonport and Keyham:									
Devonport	-	-	-	-	-	2,180	-	-	-
Keyham	-	-	-	-	-	-	-	740	-
Ditto - - Pembroke	-	-	-	-	-	450	-	-	-
Ditto - - Naval Establishments Abroad:									
Gibraltar	-	-	-	-	-	-	-	85	18
Malta	-	-	-	-	-	682	-	-	-
Halifax	-	-	-	-	-	-	-	35	18
Bex'uda	-	-	-	-	-	-	-	155	-
Esquimalt	-	-	-	-	-	282	10	-	-
						3,594	10	1,463	6
						1,463	6	4	
						£.	2,131	3	8
						Net probable Saving.			

ended 31 March 1876, showing the Surplus or Deficit upon each Sub-Heads of the Votes—*continued*.

Sir, Treasury Chambers, 9 March 1876.  
WITH reference to your letter of the 19th ultimo, as to the probable Savings on Vote 11 of the Navy Estimates for the current financial year, out of which it is proposed to meet certain expenditure for Machinery at Devonport Dockyard, estimated at 2,030 £. I am directed by the Lords Commissioners of Her Majesty's Treasury to state, for the information of their Lordships of the Admiralty, that my Lords sanction the application of the savings which are expected to arise on Vote 11 in the manner proposed in your letter now under reply, viz.:

£. 2,130, the amount of the estimated surplus on several Sub-heads of Vote 11 (Machinery portion), to meet the above-mentioned expenditure of 2,030 £. at Devonport Yard; and 3,300 £., the additional surplus also expected on the machinery portion of the same Vote, to meet excesses on the aggregate Votes for the year 1875-76.

The Secretary of the Admiralty.

I am, &c.  
(signed) *R. R. W. Lingen.*

(E. and F.)

Sir, Admiralty, 3 March 1876.  
REFERRING to your letter of the 4th January 1875, No. 19,588—74, sanctioning an excess of 500 £. on the item for repairs and maintenance at Pembroke Yard in 1874-75, to meet a claim then under arbitration of the Pembroke and Tenby Railway Company for the maintenance and working expenses of the Branch Railway into the Dockyard, I am commanded, by my Lords Commissioners of the Admiralty to acquaint you, for the information of the Lords Commissioners of Her Majesty's Treasury, that the award not having been declared before the 31st of last March, the claim could not be paid in 1874-75, and consequently the excess authorised was not then incurred.

The arbitrator has now made his award under which there is due to the Railway Company up to the 30th April last, 321 £.

At the same time my Lords also desire me to bring to your notice an unforeseen excess of about 400 £. on repairs of furnaces, &c. &c., due to the heavy wear and tear in keeping them fully going through the year.

I am to request that you will move the Lords Commissioners of Her Majesty's Treasury to sanction these payments being made in the present financial year, in excess of the item for Repairs and Maintenance at Pembroke.

I am to add that there will be a considerable surplus on the aggregate of Vote 11, after meeting all the special expenses which have been authorised by the Treasury.

The Secretary of the Treasury.

I am, &c.  
(signed) *Robert Hall.*

Sir, Treasury Chambers, 11 March 1876.  
IN reply to your letter of the 3rd instant, I am directed by the Lords Commissioners of Her Majesty's Treasury to state, for the information of their Lordships of the Admiralty, that my Lords approve of the following sums, viz.:

£. 321, the amount of the award due up to the 30th April last to the Pembroke and Tenby Railway Company for the maintenance and working expenses of the Branch Railroad into the Dockyard; and—

£. 400, an excess on account of repairs of furnaces, &c., over the item for "Repairs and Maintenance at Pembroke," being defrayed out of the surplus which is expected on the aggregate of Vote 11 of the Estimates for 1875-76, as proposed in your letter.

I am to add that my Lords presume that this expenditure will not affect the estimated amount of Savings, as stated in the Admiralty letters of the 17th and 25th January last, respectively (A. G. No. 1).

The Secretary of the Admiralty.

I am, &c.  
(signed) *William Law.*

(G.)

Sir, Admiralty, 3 November 1875.  
I AM commanded by the Lords Commissioners of the Admiralty to acquaint you, for the information of the Lords Commissioners of Her Majesty's Treasury, with the following circumstances respecting the provision taken in the Navy Estimates, Vote 11, for the erection of a Drill Shed at the Royal Marine Barracks, Plymouth,

In the Estimate for 1874-75 a sum of 2,700 £. was taken towards the cost of this building, and in the present year a further sum of 750 £. was taken for its completion; the total (3,450 £.) being the estimated cost of the whole work.

In consequence of the failure of the Contractors to deliver the ironwork of the roof within the specified time, no more than 1,639 £. was spent during last year, and as this failure was not known in time to admit of the balance being included in the Vote of the present year, a deficiency of 1,061 £. on that Vote has arisen.

In addition to this the expense of the work has been largely increased by unforeseen difficulties in obtaining a secure foundation, and by the necessity of employing civil workmen almost exclusively instead of Marine artificers, whose services were expected to be available to a much greater extent than proved to be the case.

These, and other minor causes, have increased the cost of the work by about 900 £. beyond that estimated for.

The sum, therefore, unprovided for and proposed to be charged as an excess on the item in the present year's



## Account of the Sums Expended, compared with the Sums Granted, for Navy Services in the Year

year's Estimates is 1,961 £., which may be met out of a surplus expected on Sub-head F., the aggregate of the Vote not being exceeded.

I am therefore desired to request that you will move their Lordships of the Treasury to give their concurrence to this arrangement.

The Secretary of the Treasury.

I am, &c.  
(signed) *Algernon Egerton.*

Sir,

Treasury Chambers, 6 November 1875.

I HAVE laid before the Lords Commissioners of Her Majesty's Treasury your letter of the 3rd instant, stating that a deficiency of 1,961 £. beyond the sum provided has arisen on Sub-head L., Vote 11, of the Estimates for 1875-76, on account of the erection of a Drill Shed at the Royal Marine Barracks, Plymouth; and requesting the sanction of this Board to the said deficiency being met out of a surplus expected on Sub-head F., the aggregate of the Vote not being exceeded.

In reply, I am to state, for the information of the Lords Commissioners of the Admiralty, that my Lords authorise the arrangement proposed in your letter.

The Secretary of the Admiralty.

I am, &c.  
(signed) *Charles W. Stronge.*

(H.)

Sir,

Admiralty, 8 December 1875.

I AM commanded by the Lords Commissioners of the Admiralty to inform you that on proceeding to expend the sum of 640 £., which has been provided in the Estimates for the current year for Repairs, &c., at the Naval Yard at Shanghai, it has been found that the wharfage and jetties are so hopelessly rotten as to be beyond repair, and a sum of 1,924 £. will be required to place those, which cannot be deferred, in proper condition.

As it is of great importance that the building should be kept up for the protection of the shore, I am to request the sanction of the Lords Commissioners of the Treasury to the extra expenditure, which can be charged as an excess on Vote 11, Sub-head P., of the Navy Estimates, and be met out of savings on other Sub-heads of the same Vote.

The Secretary of the Treasury.

I am, &c.  
(signed) *Robert Hall*

Sir,

Treasury Chambers, 11 December 1875.

I HAVE laid before the Lords Commissioners of Her Majesty's Treasury your letter of the 8th instant, on the subject of the cost of the repairs, &c., to be executed upon the wharfage and jetties in the Naval Yard at Shanghai; and I am to state, for the information of the Lords Commissioners of the Admiralty, that my Lords sanction an expenditure of 1,924 £. on this Service; the amount expended in excess of the 640 £. provided in the Estimates for the current year being met out of savings on other Sub-heads of the Vote (No. 11), as proposed in your letter.

The Secretary of the Admiralty.

I am, &c.  
(signed) *William Law.*

(I.)

Sir,

Admiralty, 3 January 1876.

THE Battalion of Royal Marines having, with the concurrence of the Foreign Office, been withdrawn from Japan, the question of the disposal of their camp at Yokohama has been for some time under consideration.

2. It has now been decided to retain certain portions as sites for a Naval Hospital and Victualling Stores, to be held of the Japanese Government, at an annual rent of \$ 1264.59, for a period terminable at the option of Her Majesty's Government, only relinquishing the remainder, for which a rent of \$ 2,459.56 has hitherto been paid.

3. The buildings situated on the part thus retained are valued at 1,000 £., and the cost of their conversion into Sick Quarters is estimated at 2,300 £., with an additional sum of 637 £. 10s. for making necessary roads, paths, &c.

To the above expenditure, amounting in all to 3,937 £. 10s., I am commanded by the Lords Commissioners of the Admiralty to request the sanction of the Treasury. It can be charged against the anticipated surplus on Vote 11 of the Navy Estimates.

The Secretary to the Treasury.

I am, &c.  
(signed) *A. Egerton.*

Sir,

Treasury Chambers, 18 January 1876.

WITH reference to your letter of the 3rd instant, respecting the conversion of the buildings at Yokohama, Japan, lately occupied by the Royal Marines, into Sick Quarters, I am directed by the Lords Commissioners of Her Majesty's Treasury to state, for the information of the Lords Commissioners of the Admiralty, that previous to giving their sanction to the proposed expenditure of 4,000 £. for this Service, they would wish to be informed if the Board of Admiralty are of opinion, upon consideration, that it is absolutely necessary to retain the Hospital at Yokohama, as well as at Hong Kong, for the use of Her Majesty's ships on that station.

I am to add that it would appear to my Lords, adverting to the diminution of force by the withdrawal of the Battalion of Marines, that at any rate some decrease of expenditure might take place both in the Rent of Buildings and the Establishments.

The Secretary to the Admiralty.

I am, &c.  
(signed) *William Law.*



ended 31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued.*

Sir,

Admiralty, 31 January 1876.

IN reply to your letter of the 18th instant, No. 14076, on the subject of the Lands and Buildings at Yokohama, lately occupied by the Royal Marines, I am commanded by the Lords Commissioners of the Admiralty to acquaint you, for the information of the Lords Commissioners of Her Majesty's Treasury, that a considerable diminution in the Establishments, and saving in Rent, has been effected in consequence of the withdrawal of the Marine Battalion; but the surrender to the Japanese Government of a large portion of the land hitherto rented from them has made it requisite to alter and re-adjust the Establishments which are still retained.

2. The most necessary of these is the Sick Quarters, the maintenance of which in the comparatively healthy climate of Japan is of great importance to the efficiency of the Fleet.

3. The extreme urgency of the Japanese Government, who insisted on being immediately placed in possession of all the land which was not intended to be permanently retained for naval purposes, compelled the Commander-in-Chief, in concert with Her Majesty's Minister, to conclude the requisite arrangements, of which the expenditure of the sum now in question forms part in a great measure, upon his own responsibility.

4. But for this circumstance, my Lords would have preferred to await a Vote in Parliament before incurring the expense for which Treasury sanction is now sought.

The Secretary to the Treasury.

I am, &c.

(signed) Algernon Egerton.

Sir,

Treasury Chambers, 15 February 1876.

THE Lords Commissioners of Her Majesty's Treasury have had before them Mr. Egerton's further letter of the 31st ultimo, relative to the proposed conversion of a part of the camp, lately occupied by the Royal Marine Battalion at Yokohama, Japan (now withdrawn), into Sick Quarters for the use of Her Majesty's Fleet on that station.

I am to state, for the information of the Lords Commissioners of the Admiralty, that in view of the circumstances detailed in the above-mentioned letter, and of the saving of \$2,459.56 per annum which will be effected in the rent of the land which will now be relinquished to the Japanese Government, my Lords sanction the expenditure proposed to be incurred on this Service, as stated in your letter of the 3rd ultimo, viz. :—

	£.	s.
Rent of Land to be retained	\$ 1,265 =	269 -
Cost of existing Buildings	- - - - -	1,000 -
Conversion thereof into Sick Quarters	- - - - -	2,300 -
Roads, Paths, &c.	- - - - -	637 10
	* £.	3,937 10

and they further approve of the expenditure in question being charged against the anticipated Surplus on Vote No. 11 of the Estimates for the current financial year.

The Secretary of the Admiralty.

I am, &c.

(signed) William Law.

(K.)

Sir,

Admiralty, 18 May 1875.

I AM commanded by the Lords Commissioners of the Admiralty to request that you will inform the Lords Commissioners of Her Majesty's Treasury that a letter addressed to the President of the Board of Trade by Her Majesty's Secretary, with reference to the accumulation of mud in Cowes Harbour, by which great inconvenience was caused on the occasions of the landing and embarking the Royal carriages and baggage at the pontoon adjoining the Trinity Pier at East Cowes, was recently forwarded to my Lords by Sir Charles Adderley; and in consequence of the urgency of the case they ordered, on the 20th ultimo, a dredger to be sent immediately to Cowes to remove the mud in question, so that the Queen's carriages, &c., might embark on the 23rd of April.

Up to the 8th instant a sum of 300 £. has been expended on this Service, and a similar sum will be required to complete the work, for which no provision was made in the Estimates for the current year, and my Lords are unable to admit that the cost of such a Service should be borne by Naval Funds, Cowes Harbour being in no way under their jurisdiction.

This question has previously been the subject of correspondence between the Treasury and the Admiralty, and amongst that correspondence a letter, dated 1st February 1870, from the latter Department may be specially mentioned as containing a summary of the history of the question up to that date.

In compliance with the request made by my Lords in that letter, the sanction of the Treasury was given to the expenditure of about 200 £. on dredging the harbour close to the landing place at East Cowes. On that occasion they stated their views as to the impropriety of charging the work to Naval Funds, and requested the opinion of their Lordships of the Treasury as to whether the cost of this Service should continue to be defrayed as before from the Votes of the Navy.

My Lords were at that time informed that the Treasury had communicated with the Board of Trade on the subject of the expense of retaining the desired depth of water in the channel in Cowes Harbour, owing to the want of an efficient conservancy of the Harbour; but they have not up to the present time been favoured with any expression of the views of the Lords Commissioners of the Treasury on the point, nor with any information respecting the reply of the Board of Trade to the Treasury Letter.

In the meantime calls have repeatedly been made upon the Admiralty to execute dredging to the River Medina for the convenience of Her Majesty's Yachts, and as recently as last year a sum of 1,500 £. was expended from Naval Votes for this purpose.

## ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services in the Year

I am, therefore, commanded by my Lords to request that they may be informed of the view taken by the Treasury as to which Department should be charged with the duty of maintaining the required depth of water off the Trinity Pier at Cowes, and how the cost of the necessary work should be provided.

My Lords will also be glad to receive the sanction of the Lords Commissioners of the Treasury to the Expenditure (above stated at about 600 £.) that will be incurred this year for this Service, which may be charged to Contingencies, Vote 11, and they would be obliged by a reply to this letter at as early a date as convenient to their Lordships.

The Secretary of the Treasury.

I am, &c.  
(signed) *Vernon Lushington.*

Sir,

Treasury Chambers, 26 May 1875.

I HAVE laid before the Lords Commissioners of Her Majesty's Treasury your letter of the 18th inst., in which the sanction of this Board is requested to an expenditure of about 600 £., which will be incurred this year on dredging operations in Cowes Harbour, rendered necessary on account of the accumulation of mud therein, and requesting further to be informed which department, in the opinion of their Lordships, should be charged with the duty of maintaining the required depth of water off the Trinity Pier at Cowes, and how the cost of this service should be provided.

In reply, I am to state, for the information of the Board of Admiralty, that my Lords sanction the expenditure of 600 £. that will be incurred this year on the above-mentioned service, as requested.

I am to transmit to you herewith copy of the letter from the Board of Trade to this Department, of the 19th February 1870 (as per margin), on this subject; and I am to request to be informed whether, in the opinion of the Lords Commissioners of the Admiralty, it would be possible to come to an arrangement with some of the local authorities at Cowes to take such measures as would ensure a proper depth of water being maintained, on the understanding that an annual contribution is made out of Public Funds in aid of the cost, and if so, what sum, in their Lordships' opinion, would be sufficient on the part of the public.

The Secretary of the Admiralty.

I am, &c.  
(signed) *R. R. W. Lingen.*

(Copy of Enclosure.)

Board of Trade, Harbour Department, Whitehall Gardens, S.W.,  
19 February 1870.

Sir,

I AM directed by the Board of Trade to acknowledge your letter of the 14th instant, No. 2313, transmitting copy of a letter from the Lords Commissioners of the Admiralty, and its enclosures, on the subject of retaining the desired depth of water in the channel in Cowes Harbour, and desiring to be informed whether, in the opinion of this Board, the wharf and the channel to it are of sufficient local interest, apart from Her Majesty's use of them, to warrant the expectation that the expense, or any considerable part of the expense, of maintaining them, can be placed on other than Parliamentary Funds.

In reply, I am to state, for the information of the Lords Commissioners, that as intimated in the letter from the Admiralty of the 1st instant, an application has been made to this Board by persons locally interested for a Provisional Order by which it is proposed, *inter alia*, to constitute a new harbour authority under the name of "The Cowes Harbour Improvement Commissioners."

That application is at present receiving the consideration of the Board of Trade: considerable opposition has been made to it, and it is doubtful whether any Provisional Order will be made in the matter.

But even if an Order were made, it appears to this Board more than probable that the works referred to by the Lords Commissioners of the Admiralty would not be executed by the Commissioners constituted by the Order.

With reference to the observation in Mr. Lushington's letter, that as the River Medina is not under Admiralty jurisdiction, the Lords Commissioners of the Admiralty have no power themselves to take the necessary steps for preventing the further loss of water, I am to state that the Board of Trade are not aware that either the powers which have been transferred to them, or the powers which are otherwise vested in them, enable them to do what the Admiralty are unable to effect, or to execute any works of the description referred to.

The Secretary to the Treasury.

I am, &c.  
(signed) *C. Cecil Trevor.*

(L.)

Sir,

Admiralty, 5 November 1875.

I AM commanded by my Lords Commissioners of the Admiralty, to acquaint you that, in order to bring the new basins at Portsmouth Dockyard into use, it is essential that suitable floating stages (four in number), to enable Her Majesty's ships to be alongside the new wharves, should be at once provided.

2. The cost of the work is estimated at 2,720 £., which is unprovided for in the Navy Estimates of the present year.

3. My Lords Commissioners of the Admiralty therefore request that you will move the Lords Commissioners of the Treasury to grant their sanction to this work as a charge upon Vote No. 11, "Contingencies, Sub-head S," which will bear it without excess.

The Secretary of the Treasury.

I am, &c.  
(signed) *Algernon Egerton.*



ended 31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued.*

Sir,

Treasury Chambers, 10 November 1875.

IN reply to your letter of the 5th instant, requesting the sanction of this Board for the expenditure it is proposed to incur in providing four floating stages for the new basins at Portsmouth Dockyard, I am directed by the Lords Commissioners of Her Majesty's Treasury to state, for the information of the Lords Commissioners of the Admiralty, that my Lords sanction the cost of this work, estimated at 2,720 *l.*, and which is unprovided for in the Estimates of the present financial year, as a charge upon Vote No. 11, "Contingencies," Sub-head S., as stated in your letter.

The Secretary, Admiralty.

I am, &c.  
(signed) *R. R. W. Lingen.*

(M.)

Sir,

Admiralty, 10 November 1875.

I AM commanded by the Lords Commissioners of the Admiralty to represent to you, for the information of the Lords Commissioners of Her Majesty's Treasury, that the sea is making serious encroachments on the glacis of Fort Cumberland, near Portsmouth, and it is also highly necessary that this process should be at once checked.

2. With this view it is proposed to construct a new sea wall at an estimated cost of 1,500 *l.*, which can be borne by Vote 11, Sub-head S., "Contingencies, Works and Repairs," for the present year without an excess, and I am to request the sanction of their Lordships of the Treasury to this expenditure.

The Secretary of the Treasury.

I am, &c.  
(signed) *Robert Hall.*

Sir,

Treasury Chambers, 13 November 1875.

IN reply to your letter of the 10th instant, I am directed by the Lords Commissioners of Her Majesty's Treasury to state, for the information of the Lords Commissioners of the Admiralty, that my Lords sanction the expenditure of 1,500 *l.* upon the construction of a new sea wall at Fort Cumberland, Portsmouth, being met out of Vote 11, Sub-head S., "Contingencies, Works and Repairs," of the Estimates for the present year, as proposed in your letter.

The Secretary of the Admiralty.

I am, &c.  
(signed) *William Law.*

(N.)

Sir,

Admiralty, 26 November 1875.

I AM commanded by the Lords Commissioners of the Admiralty to acquaint you, for the information of the Lords Commissioners of Her Majesty's Treasury, that in view of the urgent need for making present arrangements for the building of a new Turret Ship "Ajax," in Pembroke Dockyard, it will be necessary at once to effect certain alterations to the traveller-ways, roofs, &c. connected with Slip No. 3.

No provision having been made for this service in the Navy Estimates of the present year, I am to request that you will be good enough to move their Lordships of the Treasury to sanction the execution of the work, and to allow the expense, estimated at 1,634 *l.*, to be borne on the item for Contingencies, Vote No. 11.

The Secretary of the Treasury.

I am, &c.  
(signed) *Algernon Egerton.*

Sir,

Treasury Chambers, 30 November 1875.

IN reply to your letter of the 26th instant, requesting the sanction of this Board to certain expenditure which it is stated it will be necessary to incur at once to effect certain alterations to the traveller-ways, roofs, &c. connected with Slip No. 3 at Pembroke Dockyard, and for which no provision has been made in the Estimates for the present year; I am directed by the Lords Commissioners of Her Majesty's Treasury to request you will move the Lords Commissioners of the Admiralty to cause my Lords to be informed whether the proposed expenditure, estimated at 1,634 *l.*, can be borne on Sub-head S. of Vote 11, "Contingencies," without causing any excess; bearing in mind the several amounts which my Lords have recently authorised to be charged to this Sub-head.

The Secretary, Admiralty.

I am, &c.  
(signed) *William Law.*

Sir,

Admiralty, 14 December 1875.

I AM commanded by my Lords Commissioners of the Admiralty to acknowledge the receipt of your letter of the 30th ultimo, No. 17,909—75, on the subject of the proposed outlay for works in connection with Slip No. 3, Pembroke Dockyard, preliminary to building the "Ajax;" and in reply to state, for the information of the Lords Commissioners of Her Majesty's Treasury, that the estimated expenditure in-

## Account of the Sums Expended, compared with the Sums Granted, for Navy Services in the Year

curring or authorised under Sub-head S., Contingencies, Vote 11 (Works and Buildings), of the Navy Estimates up to this date is as follows :—

1. Amount for Services authorised in the Quarter ended 30th June, per Treasury Letter, 2nd September 1875 - - -	£.
2. Ditto - - ditto - - - 30th September, per Treasury Letter, 15th November 1875 - - -	988
3. Ditto - - ditto - - - in Current Quarter, per Treasury Letters, 10th and 13th November 1875 - - -	1,055
4. Ditto - - ditto - - - for other Services under 500 <i>l.</i> each, authorised by my Lords to be reported to the Treasury in detailed Statement at the termination of the Quarter - - -	4,220
	1,333
TOTAL - - -	£. 7,596

leaving 2,404 *l.* available to meet the outlay now proposed.

The Secretary of the Treasury.

I am, &c.  
(signed) Algernon Egerton.

Sir,

Treasury Chambers, 18 December 1875.

I HAVE laid before the Lords Commissioners of Her Majesty's Treasury your letter of the 14th instant, reporting the amount up to the present date of the estimated Expenditure chargeable to Sub-head S., "Contingencies," Vote No. 11, of the Estimates for the present year; and I am to state, for the information of the Lords Commissioners of the Admiralty, that my Lords sanction the cost, 1,634 *l.*, of the works proposed to be carried out at Pembroke Dockyard, in connection with No. 3 Slip, being charged to Sub-head S. of the above-mentioned Vote, as recommended in your letter of the 26th ultimo.

The Secretary of the Admiralty.

I am, &c.  
(signed) William Law.

(O.)

Sir,

Admiralty, 27 August 1875.

I AM commanded by my Lords Commissioners of the Admiralty to transmit to you, for the information of the Lords Commissioners of Her Majesty's Treasury, in accordance with Treasury Minute dated 24th November 1870, the enclosed statements of Urgent and Unforeseen Works chargeable to Sub-head S., "Contingencies for Works and Repairs," Vote No. 11, for the quarter ended 30th June last.

The Secretary of the Treasury.

I am, &c.  
(signed) Algernon Egerton.

STATEMENT of Urgent and Unforeseen WORKS of Small Amount unprovided for in the NAVY ESTIMATES, but authorised by the Admiralty, during the Quarter ended 30th June 1875, to be charged to Vote No. 11, Sub-head S. (Contingencies for Works and Repairs).

Prepared as requested by Treasury Minute, dated 24th November 1870.

Establishment.	S E R V I C E.	Amount.	Date of Admiralty Order.
Chatham - - -	Repairing Roof of Trimming Shop damaged by Fire.	£. s. d. 75 - -	29 June - 1875
Chatham Barracks - - -	Altering Racks to suit new description of Rifles	55 - -	10 May "
Dartmouth Sick Quarters - - -	Improving Disinfecting Oven - - -	98 - -	6 " and 3 June "
Esquimalt - - -	Erecting Store House for Steam Fire Engine -	100 - -	5 May "
Sydney - - -	Providing additional Fittings in Naval Dépôt -	60 - -	27 " "
Auckland - - -	Fencing Admiralty Property, 1874-75 - -	15 - -	21 " "

STATEMENT of Urgent and Unforeseen WORKS, the cost exceeding 500 *l.* each, unprovided for in the NAVY ESTIMATES, but authorised by the Treasury during the Quarter ended 30th June 1875, to be charged to Vote 11, Sub-head S. (Contingencies for Works and Repairs).

Prepared as requested by Treasury Minute, dated 24th November 1870.

Establishment.	S E R V I C E.	Amount.	Date of Treasury Authority.
Portsmouth - - -	Dredging in front of Trinity Pier, East Cowes -	£. s. d. 600 - -	26 May - 1875 No. 8136.



ended 31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.

Sir,

Treasury Chambers, 2 September 1875.

I HAVE laid before the Lords Commissioners of Her Majesty's Treasury your letter of the 27th ultimo, transmitting two Statements of Urgent and Unforeseen Works for the quarter ended the 30th June last, chargeable to Vote No. 11, Sub-head S. (Contingencies for Works and Repairs), in the Estimates for the current financial year; and I am to state, for the information of the Lords Commissioners of the Admiralty, that my Lords approve of the sums on account of these Services, amounting to 1,003 *l.*, being charged as proposed.

The Secretary of the Admiralty.

I am, &c.  
(signed) William Law.

(P.)

Sir,

Admiralty, 11 November 1875.

I AM commanded by my Lords Commissioners of the Admiralty to transmit to you, for the information of the Lords Commissioners of Her Majesty's Treasury, in accordance with Treasury Minute dated 24th November 1870, the enclosed statement of Urgent and Unforeseen Works chargeable to Sub-head S., "Contingencies for Works and Repairs," Vote No. 11, for the quarter ended 29th September last.

The Secretary of the Treasury.

I am, &c.  
(signed) Algernon Egerton.

STATEMENT of Urgent and Unforeseen WORKS of Small Amount unprovided for in the NAVY ESTIMATES, but authorised by the Admiralty, during the Quarter ended 29th September 1875, to be charged to Vote No. 11, Sub-head S. (Contingencies for Works and Repairs).

Prepared as requested by Treasury Minute, dated 24th November 1870.

Establishment.	SERVICE.	Amount.	Date of Admiralty Order.
Mylor Depôt - - - -	Renewing Water Main - - - - -	£. s. d. 20 - -	20 Aug. 1875
Ditto - - - - -	Repairing Gymnasium and Blacksmith's Shop -	Estimated at 20 - -	Sept. "
Jamaica Yard - - - -	Forming Recreation Ground for Officers and Seamen.	355 - -	17 July "
Ditto - - - - -	Alterations to late Paymaster's Residence -	260 - -	17 " "
Esquimaux Yard - - -	Erecting Cottages for Four Storehousemen -	400 - -	13 Sept. "

Sir,

Treasury Chambers, 15 November 1875.

I HAVE laid before the Lords Commissioners of Her Majesty's Treasury your letter of the 11th instant, enclosing a statement of the Urgent and Unforeseen Works chargeable to Sub-head S., "Contingencies for Works and Repairs," Vote No. 11, of the Estimates for the current year, for the quarter ended 29th September last.

In reply, I am to state, for the information of the Lords Commissioners of the Admiralty, that my Lords sanction the amount of this expenditure, viz., 1,055 *l.*, being charged in the manner proposed, but I am to point out that they would have considered that the "formation of a recreation ground for officers and seamen at Jamaica Yard" is a service which might have been foreseen and provided for.

The Secretary of the Admiralty.

I am, &c.  
(signed) R. R. W. Lingen.

(Q.)

Sir,

Admiralty, 9 February 1876.

I AM commanded by my Lords Commissioners of the Admiralty to transmit to you, for the information of the Lords Commissioners of Her Majesty's Treasury, in accordance with Treasury Minute dated 24th November 1870, the enclosed statements of Urgent and Unforeseen Works charged to Sub-head S., Contingencies for Works and Repairs, Vote No. 11, for the quarter ended 31st December 1875.

The Secretary to the Treasury.

I am, &c.  
(signed) Robert Hall.

## Account of the Sums Expended, compared with the Sums Granted, for Navy Services in the Year

STATEMENT of Urgent and Unforeseen WORKS of Small Amount unprovided for in the NAVY ESTIMATES, but authorised by the Admiralty during the Quarter ended 31st December 1875, to be charged to Vote No. 11, Sub-head S. (Contingencies for Works and Repairs).

Prepared as requested by Treasury Minute, dated 24th November 1870.

Establishment.	S E R V I C E.	Amount.	Date of Admiralty Order.
		£. s. d.	
Chatham Yard - - -	Laying down Pipes for improving Water Supply for drinking purposes.	490 - -	4 Nov. 1875
Chatham Barracks - - -	Store Room on Upper Deck of Ship Gun Battery.	64 - -	7 Oct. "
Sheerness - - -	Drying Closet for Naval Barracks - - -	200 - -	28 " "
Eastney Barracks - - -	Conversion of Cholera Hut into a Temporary Infirmary.	170 - -	31 " "
Clarence Yard - - -	Dolphin at entrance to Clarence Creek - - -	30 - -	11 Dec. "
Plymouth Hospital - - -	Improving Ventilation of Wards - - -	40 - -	13 Nov. "
Pembroke - - -	Alterations to Married Police Constables' Quarters.	51 - -	15 " "
Mylor Depôt - - -	Additional Repairs to Water Main - - -	5 - -	6 Dec. "
Gibraltar Yard - - -	Renewing Gas Mains - - -	275 - -	20 Oct. "
Esquimaux Yard - - -	Erecting Cottages for Four Storehousemen - - -	190 - - (Estimated Additional).	20 Dec. "
Fernando Po - - -	Erection of Temporary Boat Shed at Gravina Bay.	32 - -	1 Nov. "
Barbados - - -	Fixing Temperature Pipes in Coal Depôt - - -	11 - -	8 " "

STATEMENT of Urgent and Unforeseen WORKS, the Cost exceeding 500 £. each, unprovided for in the NAVY ESTIMATES, but authorised by the Treasury during the Quarter ended 31st December 1875, to be charged to Vote No. 11, Sub-head S. (Contingencies for Works and Repairs).

Prepared as requested by Treasury Minute, dated 24th November 1870.

Establishment.	S E R V I C E.	Amount.	Date of Treasury Authority.
		£. s. d.	
Portsmouth - - -	Floating Fenders in Tidal Basin - - -	2,720 - -	10 Nov. 1875 (No. 16,743.)
Eastney Barracks - - -	Re-constructing Sea Wall at Fort Cumberland.	1,500 - -	13 Nov. 1875 (No. 14,758)
Pembroke - - -	Alterations at Slip No. 3, for building the "Ajax."	1,634 - -	18 Dec. 1875 (No. 18,861.)

Sir,

Treasury Chambers, 15 February 1876.

I HAVE laid before the Lords Commissioners of Her Majesty's Treasury your letter of the 9th instant, enclosing statements of the Urgent and Unforeseen Works, charged to Sub-head S., "Contingencies for Works and Repairs," of Vote No. 11, of the Estimates for the current year, for the quarter ended the 31st December last; and I am to state, for the information of the Lords Commissioners of the Admiralty, that my Lords approve of the expenditure included in the returns forwarded, amounting to the sum of 7,412 £.

The Secretary of the Admiralty.

I am, &c.  
(signed) William Law.

(R.)

Sir,

Admiralty, 27 April 1876.

I AM commanded by my Lords Commissioners of the Admiralty to transmit to you, for the information of the Lords Commissioners of Her Majesty's Treasury, in accordance with Treasury Minute dated 24th November 1870, the enclosed statement of Urgent and Unforeseen Works, chargeable to Sub-head S., "Contingencies for Works and Repairs," Vote 11, for the quarter ended 31st March 1876.

The Secretary of the Treasury.

I am, &c.  
(signed) Algernon Egerton.

31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.

STATEMENT of Urgent and Unforeseen WORKS of Small Amount unprovided for in the NAVY ESTIMATES, but authorised by the Admiralty, during the Quarter ended 31st March 1876, to be charged to Vote No. 11, Sub-head S. (Contingencies for Works and Repairs).

Prepared as requested by Treasury Minute, dated 24th November 1870.

Establishment.	SERVICE.	Amount.	Date of Admiralty Order.
Sheerness - - - -	Extending Head of Dock, No. 2 - - -	£. 220	31 March 1876
Lisbon - - - -	Raising height of Boundary Wall - - -	30	25 " "
Port Said - - - -	Repairs to House occupied by Keeper - -	23	7 " "
Barbados - - - -	Alterations in Naval Storehouse - - -	16	8 February "
Singapore - - - -	New Steps to Admiralty Pier; Pulo Brani Coal Depot.	16	23 " "

Sir,

Treasury Chambers, 2 May 1876.

I HAVE laid before the Lords Commissioners of Her Majesty's Treasury your letter of the 27th ultimo, transmitting a statement of "Urgent and Unforeseen Works," for the quarter ended 31st March last, for which no provision has been made in the Estimates; and I am to state, for the information of their Lordships of the Admiralty, that my Lords approve of the amount of the same, viz., 305 £, being charged to Sub-head "S., Contingencies for Works and Repairs," of Vote 11, as submitted in your letter.

The Secretary of the Admiralty.

I am, &c.  
(signed) William Law.

(S.)

EXTRACT from STATEMENT of Urgent and Unforeseen WORKS, Midsummer Quarter 1876, of Items described therein as charged to the Year 1875-76.

Admiralty Letter, 24th, and Treasury approval, 28th July 1876.

Establishment.	SERVICE.	Amount.	Date of Admiralty Order.
Sydney - - - -	Repairing Dwelling House, Garden Island -	£. *23	20 April 1876
Singapore - - - -	Constructing Temporary Coal Store at Pulo Brani.	*34	20 " "
Barbados - - - -	Lettering two Coal Sheds - - - -	*2	20 " "
Sierra Leone - - - -	Constructing temporary Coal Shed - - -	*30	28 October 1875

\*Charged to 1875-76.

(T.)

EXTRACT from STATEMENT of Urgent and Unforeseen WORKS, Michaelmas Quarter, 1876, of Items described therein as charged to the Year 1875-76.

Admiralty Letter, 9th, and Treasury approval, 16th October 1876.

Establishment.	SERVICE.	Amount.	Date of Admiralty Order.
Hong Kong Hospital - -	Purchase of a Chinese Latrine and converting into a Dead-house, Store, &c. Charged to 1875-76.	£. 392	11 August 1876

ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services in the Year ended

SERVICE.	GRANT.	(A.) EXPENDITURE.	Abate Amount included in Column (A.), on account of Expenditure for Ashantee Expedition.	NET ORDINARY NAVAL EXPENDITURE.
VOTE No. 12.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
MEDICINES AND MEDICAL STORES, &c.:				
A.—Hospital and Infirmary Provisions and Stores.	45,830 - -	48,004 1 8	- - - -	48,004 1 8
B.—Medicines and Surgical and Chemical In- struments and Appliances.	*7,100 - -	5,993 19 2	- - - -	5,993 19 2
C.—Subsistence of Seamen, &c., at Sick Quarters, &c.	*11,600 - -	12,617 18 8	4 2 -	12,618 16 8
D.—Expense of carrying out Contagious Diseases Act, &c.	15,500 - -	14,999 11 4	- - - -	14,999 11 4
E.—Miscellaneous Disbursements, Medical Ser- vice.	1,500 - -	1,756 3 10	- - - -	1,756 3 10
	*81,530 - -	83,371 14 8	4 2 -	83,367 12 8
Abate,— F.—Credit for Men maintained at the expense of Greenwich Hospital - - - -	8,000 - - -	8,621 8 - (Credit.)	- - - -	8,621 8 -
£.	*73,530 - -	74,750 6 8	4 2 -	74,746 4 8
				73,530 - -
			Net Deficit - - - £.	1,216 4 8

\* Including Supplementary Estimate.

SERVICE.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.	
			Less than Granted.	More than Granted.
VOTE No. 13.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
MARTIAL LAW AND LAW CHARGES:				
A.—Legal Department - - - -	8,538 - -	7,566 7 7	971 12 5	- - -
B.—Courts Martial - - - -	2,000 - -	2,771 9 5	- - -	771 9 5
C.—Naval Prison, Lewes - - - -	3,321 - -	3,161 6 1	159 13 11	- - -
D.—Naval Prisons, Hong Kong and Bermuda	445 - -	403 15 7	41 4 5	- - -
E.—Conveyance of Prisoners - - - -	1,600 - -	1,912 14 6	- - -	312 14 6
	15,904 - -	15,815 13 2	1,172 10 9	1,084 3 11
	15,815 13 2	- - -	1,084 3 11	- - -
Net Surplus - - - £.	88 6 10	£.	88 6 10	



31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—continued.

EXPENDITURE, COMPARED WITH GRANT.		EXPLANATION OF THE CAUSES OF VARIATION BETWEEN EXPENDITURE AND GRANT.
Less than Granted.	More than Granted.	
£. s. d.	£. s. d.	
- - -	2,174 1 8	Deficit: More fresh Provisions and Medical Comforts than estimated for, being required for the sick, both in Hospitals and in Sick Bays of Her Majesty's Ships.
1,106 - 10	- - -	Surplus: Less Drugs and Surgical Instruments being required than estimated for, both at Hospitals and Medical Depôts.
- - -	1,013 16 8	Deficit: A larger number of Men than estimated for, having been under medical treatment in Sick Quarters at Home, during the inclement Spring and Summer of 1875.
500 8 8	- - -	Surplus: Mainly owing to the diminution in the number of patients at Devonport and Portsmouth.
- - -	256 3 10	Deficit: A rather larger expenditure than estimated for having occurred under the heads of "Funerals" and "Miscellaneous Disbursements" (Sick Bay Washing).
1,606 9 6	3,444 2 2	
- - -	621 8 -	Surplus: A larger number of Men having been admitted to Naval Hospitals at the expense of Greenwich Hospital than provided for.
1,606 9 6	2,822 14 2	
	1,606 9 6	
	1,216 4 8	

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

Surplus: chiefly owing to the saving effected by the acting appointment made on the decease of the late Solicitor, and to the Law Charges having fallen short of the average expenditure of previous years, on which the Estimate was based.

Deficit: caused by the requirements having exceeded the Estimate, which was based on the expenditure of previous years.

Surplus: owing to the actual requirements of the Prison having been somewhat less than was anticipated.

Surplus: arising from the full number of Ship's Corporals at Bermuda not having been employed throughout the year, and from the Master-at-Arms at Hong Kong having been in receipt of the minimum rate of Pay, instead of the mean rate as provided for.

Deficit: caused by the Expenditure having exceeded the estimated amount which was based on the expenditure of previous years.

ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services in the Year ended

SERVICE.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.	
			Less than Granted.	More than Granted.
VOTE No. 14.				
MISCELLANEOUS SERVICES:	£. s. d.	£. s. d.	£. s. d.	£. s. d.
A.—Piloting and Towing Her Majesty's Ships*	9,800 - -	14,311 14 5	- - -	4,511 14 5
B.—Commanders-in-Chief, Expenses attendant on.	4,200 - -	4,353 8 7	- - -	153 8 7
C.—Passage Money and Conveyance of Officers, Seamen, Marines, &c.	63,000 - -	83,126 5 10	- - -	20,126 5 10
D.—Telegraphic Communications, Expense of -	2,000 - -	3,586 4 4	- - -	1,586 4 4
E.—Compensation to Officers, &c. for Losses by Shipwreck, &c.	1,000 - -	4,178 16 11	- - -	3,178 16 11
F.—Contributions in aid of Sailors' Homes -	600 - -	600 - -	- - -	-
G.—Contributions in aid of Religious and Charitable Institutions.	1,400 - -	1,534 6 1	- - -	134 6 1
H.—Allowances to Ministers of Religion, &c. -	3,000 - -	3,200 1 4	- - -	200 1 4
I.—Per-centage to Banks, &c. - - -	1,500 - -	1,867 15 2	- - -	367 15 2
J.—Maintenance of a Floating Light Vessel at the Warner.	370 - -	370 - -	- - -	-
K.—Medals for Seamen and Marines - - -	1,600 - -	2,718 12 1	- - -	1,118 12 1
M.—Stamps on Contracts and on Officers' Commissions.	1,600 - -	2,384 8 8	- - -	784 8 8
N.—Assistance rendered to Her Majesty's Ships when in distress.	500 - -	150 - -	350 - -	- - -
Carried forward - - - £.	90,570 - -	122,381 13 5	350 - -	32,161 13 5

\* Including Supplementary Estimate.

31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

Deficit: owing to heavy Suez Canal Dues, including those of return voyage of H. R. H. the Prince of Wales from India, which it was anticipated would fall upon the year 1876-77.

Deficit: requirements of the Service were in excess of Estimate.

Deficit: owing to unusually heavy expenditure in taking up freight to relieve crews of Her Majesty's Ships abroad, and to larger payments for passages of invalids, and of officers and others out and home than provided for; the provision for this service in the Estimates 1876-77 has actually been increased, the Estimate for 1875-76, though apparently greater, having included special provision for arrear claims from the Indian Government.

Deficit: owing to no provision having been made for the cost of foreign telegrams sent through the Post Office, which expense subsequent to the preparation of the Estimates was directed to be borne by the Departments concerned; also to the cost of Miscellaneous Telegraph Expenses having been more than anticipated.

Deficit: owing to the loss of H.M.S. "Vanguard."

Deficit: owing to larger grants having been made than were anticipated.

Deficit: the requirements in excess of the Estimate; the provision has been increased in the Estimates 1876-77 by this amount.

Deficit: owing to the requirements being in excess of the provision arising from extended transactions with Banks, &c.; the provision has been increased in the Estimates for 1876-77.

Deficit: arising from the grant of Good Conduct, &c., medals not provided for in the Estimates.

Deficit: owing to the requirements for "Advertising, &c." having been in excess of the Estimate, the provision in the Estimates 1876-77 has been increased by 200 £.

Surplus: no necessity having arisen for expending the full sum provided.

ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services in the Year en

SERVICE.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.	
			Less than Granted.	More than Granted.
VOTE No. 14—continued.				
MISCELLANEOUS SERVICES—continued.	£. s. d.	£. s. d.	£. s. d.	£. s.
Brought forward - - -	90,570 - -	122,381 13 5	350 - -	32,161 13
O.—Compensation for Damage done by Her Majesty's Ships.	2,000 - -	4,446 10 -	- - -	2,446 10
P.—Gratuities for Special Services - - -	1,000 - -	721 19 2	278 - 10	- -
Q.—Expense of Committees - - - -	2,000 - -	6,069 13 7	- - -	4,069 13
R.—Allowances for Stationery, &c., Her Majesty's Ships.	2,600 - -	2,831 18 6	- - -	231 18
S.—Loss by Exchange, &c. - - - -	300 - -	281 14 9	18 5 3	- -
T.—Lodging Allowances to Officers, &c., of Her Majesty's Ships.	3,500 - -	6,241 15 9	- - -	2,741 15
U.—Water Police - - - - -	4,453 - -	4,446 13 10	6 6 2	- -
V.—Torpedo Experiments - - - -	2,000 - -	2,615 2 11	- - -	615 2
W.—Naval Attachés to British Embassies Abroad	1,800 - -	2,081 1 4	- - -	281 1
X.—Naval Savings Bank - - - -	800 - -	800 - -	- - -	- -
Y.—Graving Dock at Table Bay, Cape of Good Hope.	5,000 - -	- - -	5,000 - -	- -
Y.Y.—Award to Indian Government on account of the "Serapis" and "Crocodile."	25,600 - -	25,655 18 1	- - -	55 18
Z.—Miscellaneous Payments and Allowances.	*14,800 - -	24,956 8 9	- - -	10,156 8
£.	*156,423 - -	203,530 10 1	5,652 12 3	52,760 2
		156,423 - -		5,652 12
Net Deficit - - - £.		47,107 10 1	£.	47,107 10

\* Including Supplementary Estimate.



31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

Deficit: owing to the collision with the "Mistletoe" in the Solent.

Surplus: actual requirements less than the amount provided.

Deficit: arising from heavy expenditure on the Boiler, Torpedo, and Engineers' Committees, not adequately provided for.

Deficit: owing to the actual Expenditure having exceeded the Estimate, based on the Expenditure of previous years.

Surplus: arising from the payments for Discount, &c., having fallen short of the amount provided.

Deficit: arising from the actual requirements having considerably exceeded the Estimate; the Expenditure however includes some exceptional items, and the provision for this Service has been increased by 500 £. in the Estimates 1876-77.

Surplus: slight variation from Estimate.

Deficit: arising principally from the issues of stores for this Service having been greater than was anticipated. It is probable however that many articles may, in subsequent years, be returned into store at the yards for general service.

Deficit: owing to heavy expenses for Travelling (including an arrear claim) reduced by a quarter's salary for one officer being left unpaid until 1876-77.

Surplus: owing to the scheme for a Graving Dock at Table Bay having been abandoned.

Deficit: slight variation from the Estimate.

Deficit: arising principally from the expenses attendant on H.R.H. the Prince of Wales' visit to India, having considerably exceeded (viz., by 6,000 £.) the provision made in the Supplementary Estimate; from Miscellaneous Expenses special to Boys in Training Ships (2,450 £.), formerly defrayed out of a Fund derived from their "Savings of Provisions" (provided for in Estimates 1876-77, under a special Sub-Head of this Vote); from charges consequent on collision with the "Mistletoe" (1,034 £.); and from the continued heavy expenses attendant on the employment of Naval Officers, &c., on services in connection with the revision of the Queen's Regulations, the revised Lighting system for the Fleet, and various special inquiries.

ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services in the Year end

SERVICE.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.	
			Less than Granted.	More than Grants
VOTE No. 15.				
HALF PAY, RESERVED HALF PAY, AND RETIREMENT TO OFFICERS OF THE NAVY AND ROYAL MARINES:	£. s. d.	£. s. d.	£. s. d.	£.
A.—Half Pay, Reserved, and Retired Pay* -	776,907 - -	768,567 11 -	8,339 9 -	- -
B.—Commutation of Retired Pay - - -	112,604 - -	112,603 15 -	- 5 -	- -
£.	*889,511 - -	881,171 6 -	8,339 14 -	
	881,171 6 -			
Net Surplus - - £.	8,339 14 -		8,339 14 -	

SERVICE.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.	
			Less than Granted.	More than Grant.
VOTE No. 16.—SECTION I. MILITARY PENSIONS.	s. d.	£. s. d.	£. s. d.	£.
A.—Pensions for Good and Meritorious Services	7,500 - -	5,722 2 1	1,777 17 11	- -
B.—Pensions for conspicuous Bravery - -	240 - -	217 16 -	22 4 -	- -
C.—Flag Officers' Retired Service Pensions -	450 - -	353 3 2	96 16 10	- -
D.—Pensions and Gratuities for Wounds and Injuries received in the Service.	9,036 - -	9,854 6 1	- - -	818
E.—Pensions to Engineers, Warrant Officers, &c.	57,673 - -	57,323 14 10	349 5 2	- -
F.—Pensions to Widows and Relatives of Officers slain, &c.	12,635 - -	12,718 2 5	- - -	83
G.—Pensions to Widows of Naval Officers -	133,846 - -	132,218 - 10	1,627 19 2	- -
H.—Pensions to Widows of Marine Officers -	9,244 - -	8,494 4 5	749 15 7	- -
I.—Compassionate List - - - - -	18,000 - -	18,408 12 -	- - -	408
K.—Compensation Allowances to Lieutenants late of Naval Hospitals on loss of Appoint- ments.	265 - -	265 7 -	- - -	-
L.—Pensions to Old and Disabled Commis- sioned Officers.	5,025 - -	5,062 11 7	- - -	37
M.—Pensions and Gratuities to Seamen and Ma- rines.	417,837 - -	443,187 2 5	- - -	25,350
N.—Commutation of Military Pensions - -	10,030 - -	10,030 5 -	- - -	-
£.	681,781 - -	703,855 7 10	4,623 18 8	26,698
		681,781 - -		4,623
Net Deficit - - £.		22,074 7 10		22,074

\* Including Supplementary Estimate.

31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued.*

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

Surplus: mainly arising from fewer officers having to be paid out of Vote 15 than was anticipated in January 1875, when the Estimate was framed. The additional retirement, moreover, for the expense of which a Supplementary Estimate of 1,300 £. was voted, only occurred to a slight extent.

Surplus: fractional difference.

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

Surplus: owing to Pensions to Flag Officers being withheld whilst on Full Pay; also to four Pensions to General Officers of Marines being in abeyance; and to fluctuations in the periods in which Pensions are claimed.

Surplus: caused by fluctuations in the periods in which Pensions are claimed.

Surplus: caused by a death; vacancies not to be filled up under Order in Council; 1866.

Deficit: occasioned by awards of Gratuities for injuries received in the Ashantee Expedition.

Surplus: owing to Pensions unclaimed, and to fluctuation in periods in which Pensions are claimed.

Deficit: owing to the Pensions granted during the year having exceeded those lapsed by deaths.

Surplus: arising from the amount of Pensions ceased being in excess of those granted; from fluctuations in the period in which Pensions are claimed, and from Pensions unclaimed.

- - Ditto - - - ditto.

Deficit: owing to the requirements of the Service having exceeded the Estimate; the provision has been increased in the Estimates 1876-77.

Deficit: Fractional difference.

Deficit: arising from fluctuations in the periods in which Pensions are claimed, &c.

Deficit: arising from the Estimate having proved insufficient to meet the growing expenditure at the high rates of Pensions now becoming due, owing to the fuller operation of the Continuous Service Regulations. The Estimate for 1876-77, however, has been prepared on a different basis, and will, it is anticipated, meet the requirements of the current year.

Deficit: fractional difference.

ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services in the Year end

S E R V I C E.	GRANT.	EXPENDITURE.	EXPENDITURE, COMPARED WITH GRANT.	
			Less than Granted.	More than Granted.
VOTE No. 16.—SECTION II.				
CIVIL PENSIONS:	£. s. d.	£. s. d.	£. s. d.	£. s.
A.—Pensions, Civil, Salaried Officers - - -	92,196 - -	93,426 9 2	- - -	1,230 9
B.—Pensions, Civil, Artificers, &c. - - -	116,482 - -	114,096 11 9	2,385 8 3	- - -
C.—Pensions, Civil, Coast Guard - - -	55,392 - -	57,210 16 9	- - -	1,818 16
D.—Gratuities to Persons on Retirement or Discharge, &c. - - -	1,800 - -	1,154 14 4	645 5 8	- - -
E.—Contribution in aid of a Pension Fund for the Metropolitan Police - - -	2,070 - -	1,946 13 2	123 6 10	- - -
F.—Commutation of Civil Pensions - - -	16,589 - -	16,588 12 -	- 8 -	- - -
£.	284,529 - -	284,423 17 2	3,154 8 9	3,049 5 1
	284,423 17 2.		3,049 5 11	
Net Surplus - - - £.	105 2 10	£.	105 2 10	

S E R V I C E.	GRANT.	(A.) EXPENDITURE.	Abate Amount included in Column (A.) on Account of Expenditure for Ashantee Expedition.	NET ORDINARY NAVAL EXPENDITURE.
VOTE No. 17.				
EXTRA ESTIMATE FOR SERVICES NOT NAVAL.				
FREIGHT, &c., ON ACCOUNT OF THE ARMY DEPARTMENT:	£. s. d.	£. s. d.	£. s. d.	£. s. d.
A.—Special Allowances to Officers and Men, Her Majesty's Troop Ships - - -	1,350 - -	1,339 10 11	- - -	1,339 10 11
B.—Victuals, &c., Her Majesty's Troop Ships - -	12,150 - -	9,688 13 4	- - -	9,688 13 4
C.—Coals, Cabin Furniture, and other Stores, Her Majesty's Troop Ships - - -	23,000 - -	22,654 6 6	- - -	22,654 6 6
Carried forward - - - £.	36,500 - -	33,682 10 9	- - -	33,682 10 9



31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.

EXPLANATION OF THE CAUSES OF VARIATION  
BETWEEN EXPENDITURE AND GRANT.

Surplus: a net surplus of 1,154*l.* 19*s.* 1*d.*, caused by fluctuations in the periods in which Pensions are claimed. The disproportion in the amount under the separate Sub-Heads is owing to too large a proportion of the contemplated reduction of 10,000*l.*—for the estimated probable “Excess of Pensions ceasing over those Granted”—being apportioned to Sub-Head A.

Deficit: arising from the amount of Pensions granted having exceeded those lapsed by death, the anticipation of an excess of Pensions ceasing over those granted not having been realised; also from fluctuations in the periods in which Pensions are claimed.

Surplus: the amount actually required being less than was anticipated.

Surplus: the amount required to be contributed less than was anticipated.

Surplus: fractional difference.

EXPENDITURE, COMPARED WITH GRANT.			EXPLANATION OF THE CAUSES OF VARIATION BETWEEN EXPENDITURE AND GRANT.		
Less than Granted.			More than Granted.		
£.	s.	d.	£.	s.	d.
10	9	1	-	-	-
2,461	6	8	-	-	-
345	13	6	-	-	-
2,817	9	3	—		

Surplus: ships not in commission for the whole period estimated for.

Surplus: difference between an estimated and an actual expenditure.

## ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services in the Year ended

SERVICE.	GRANT.	(A.) EXPENDITURE.	Abate Amount included in Column (A.) on Account of Expenditure for Ashantee Expedition.	NET ORDINARY NAVAL EXPENDITURE.
VOTE No. 17— <i>continued</i> .				
EXTRA ESTIMATE FOR SERVICES NOT NAVAL.—FREIGHT, &c., ON ACCOUNT OF THE ARMY DEPART- MENT— <i>continued</i> .	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Brought forward - - -	36,500 - -	33,682 10 9	- - -	33,682 10 9
D.—Medicines, &c., Her Majesty's Troop Ships	600 - -	338 19 7	- - -	338 19 7
E.—Pilotage and other Miscellaneous Expenses, Her Majesty's Troop Ships - - -	3,500 - -	1,897 14 2	- - -	1,897 14 2
F.—Freight, &c., of Ships on Monthly Pay -	- - -	1,274 - 4	1,263 12 4	10 8 -
G.—Conveyance of Troops, Abroad and Home- ward - - - - -	41,400 - -	51,589 19 5	- - -	51,589 19 5
H.—Coals for Steam Transports Ships on Monthly Pay - - - - -	- - -	8,304 8 1	522 17 10	7,781 10 3
I.—Freight of Army and Ordnance Stores, Abroad and Homeward - - - -	32,000 - -	39,430 11 3	- - -	39,430 11 3
K.—Inter-colonial Conveyance of Troops and Mess - - - - -	9,700 - -	13,101 18 8	2 - -	13,099 18 8
L.—Inter-colonial Freight of Army and Ord- nance Stores - - - - -	1,000 - -	884 12 1	131 1 3	753 10 10
M.—Mess Allowances to Army Officers, &c., Abroad and Homeward - - - -	5,520 - -	Cr. 117 13 7	- - -	Cr. 117 13 7
N.—Freight of Ships on short Services - -	6,500 - -	6,388 3 7	- - -	6,388 3 7
O.—Passage Money, Army - - - - -	16,000 - -	14,306 - 8	42 4 -	14,263 16 8
P.—Fitting Transports and Freight Ships -	100 - -	366 3 10	1 - -	365 3 10
Carried forward - - - £.	152,820 - -	171,447 8 10	1,962 15 5	169,484 13 5

March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—*continued*.

EXPENDITURE, COMPARED WITH GRANT.			EXPLANATION OF THE CAUSES OF VARIATION BETWEEN EXPENDITURE AND GRANT.			
Less than Granted.		More than Granted.				
£.	s.	d.	£.	s.	d.	
817	9	3	—			
261	—	5	—			Surplus: ships not in commission for the whole period estimated for; and the Expenditure under this head proved less than expected.
1,602	5	10	—			Surplus: owing to canal dues on "Himalaya" not having been paid for homeward voyage, in consequence of her detention in China and India.
—	—	—	10	8	—	Deficit: repayment of a provisional abatement made in a previous year.
—	—	—	10,189	19	5	Deficit: owing to the repayment to India for adjustment of China War claims, the conveyance of a company of Royal Engineers to Fiji (sanctioned by Treasury Letter, 7th December 1875*), and the homeward conveyance of time-expired men in contract packets being required to a somewhat larger extent than contemplated when the Estimate was framed.
—	—	—	7,781	10	3	Deficit: repayment to India for adjustment of China War claims.
—	—	—	7,430	11	3	Deficit: owing to repayment to War Office of claims relating to prior years, and to the expense of the conveyance of obsolete stores to England being greater than was expected when the Estimate was framed.
—	—	—	3,399	18	8	Deficit: owing principally to the local movement of Troops at the Cape of Good Hope, which was unforeseen when the Estimate was framed.
246	9	2	—			Surplus: the provision in the Estimate based on past Expenditure proved greater than the requirements.
637	13	7	—			Surplus: receipts for mess contributions paid over by the War Office were in excess of the Estimate, and troop ships were not in commission for so long as expected.
111	16	5	—			Surplus: difference between an estimated and an actual Expenditure.
736	3	4	—			Surplus: principally owing to the repayments by the War Office being in excess of the amount anticipated when the Estimate was framed.
—	—	—	265	3	10	Deficit: owing to the expense of fitting ships engaged abroad.
412	18	—	29,077	11	5	* Copies of application made to Treasury, and Treasury reply thereto appended ( <i>see</i> p. 76).

ACCOUNT of the Sums Expended, compared with the Sums Granted, for Navy Services in the Year ended

SERVICE.	GRANT.	(A.) EXPENDITURE.	Abate Amount included in Column (A.) on Account of Expenditure for Ashantee Expedition.	NET ORDINARY NAVAL EXPENDITURE.
VOTE No. 17—continued.				
EXTRA ESTIMATE FOR SERVICES NOT NAVAL.—FREIGHT, &c., ON ACCOUNT OF THE ARMY DEPART- MENT—continued.	£. s. d.	£. s. d.	£. s. d.	£. s.
Brought forward - - -	152,820 - -	171,447 8 10	1,962 15 5	169,484 13
Q.—Bedding and other Stores for Troops - -	1,200 - -	728 19 6	105 6 -	623 13
R.—Forage and Stores for Horses - - - -	1,100 - -	619 13 4	10 10 10	609 2
S.—Pay and Contingent Expenses of Trans- port Officers Afloat, &c. - - -	- - -	10 - 2	10 - 2	-
T.—Provisions, &c. for Troops - - -	15,450 - -	6,822 9 2	846 4 -	5,976 5
SERVICE AFLOAT - - - £.	170,570 - -	179,628 11 -	2,934 16 5	176,693 14
U.—Transport Officers in London and at the Out-ports - - - -	1,520 - -	1,671 3 7	- - -	1,671 3
£.	172,090 - -	181,299 14 7	2,934 16 5	178,364 18
				172,090 - -
			Net Deficit - - - £.	6,274 18
BALANCES IRRECOVERABLE - - - £.	- - -	2,680 8 4	- - -	- - -

(U.)

Sir,

3 December 1875.

I am commanded by my Lords Commissioners of the Admiralty to request that you will represent to the Lords Commissioners of Her Majesty's Treasury that an extra expense of about 2,400 £, which will fall upon Naval Funds (Vote 17, Sub-Heads and I.), has been incurred in providing passage from this country to Fiji, *via* Sydney, New South Wales, for a company of Royal Engineers, this service not having been provided for in the Estimates for the current financial year.

2. With a view to adjusting the difference thus occasioned between estimate and expenditure, I am to suggest, for the concurrence of the Lords Commissioners of the Treasury, that the expense in question be temporarily defrayed out of a surplus expected to accrue under Sub-Head C. of the same Vote (Coals, &c. for Her Majesty's Troop Ships), in consequence of some of the Troop Services there provided for having been withdrawn.

The Secretary to the Treasury.

I am, &c.  
(signed) Vernon Lushington.

Sir,

Treasury Chambers, 7 December 1875.

In reply to your letter of the 3rd instant, on the subject of the expenditure of 2,400 £, which has been incurred in providing passages from this country to Fiji for a detachment of Royal Engineers, for which no provision was made in the Estimates of the present financial year, I am directed by the Lords Commissioners of Her Majesty's Treasury to request you will inform £.2,400. Lords Commissioners of the Admiralty that my Lords sanction the deficiency of 2,400 £, which has arisen on Sub-Heads G. and I., being defrayed from savings to be effected on Sub-Head C. of the same Vote (No. 17), as proposed in your letter.

The Secretary of the Admiralty.

I am, &c.  
(signed) William Lushington.



1 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Votes—continued.

EXPENDITURE, COMPARED WITH GRANT.				EXPLANATION OF THE CAUSES OF VARIATION BETWEEN EXPENDITURE AND GRANT.	
Less than Granted.		More than Granted.			
£.	s. d.	£.	s. d.		
2,412	18 -	29,077	11 5		
576	6 6	-	-	Surplus: owing to the expenses being less than was anticipated for Her Majesty's troop ships, which were not so long in commission as expected when the Estimates were framed.	
490	17 6	-	-	Surplus: the horse gear required for Her Majesty's troop ship "Assistance" was not obtained in time for charge to this year, in the Estimate for which the expense was provided for.	
-	-	-	-		
9,473	14 10	-	-	Surplus: owing principally to re-payments by War Office being larger than estimated, and to credits received for stores returned from one of Her Majesty's troop ships paid off earlier than intended when the Estimate was framed.	
2,953	16 10	29,077	11 5		
-	-	151	3 7	Deficit: the sum provided for travelling expenses proved insufficient for the requirements of the Service.	
9,953	16 10	29,228	15 -		
		22,953	16 10		
		6,274	18 2		
-	-	2,680	8 4	Caused by—	
				Balances due on cash accounts of Paymasters of Her Majesty's Ships "Aboukir," "Devastation," and "Seagull," found to be irrecoverable - - - - -	£. s. d. 1,556 19 9
				Balances against Men at the several Marine Divisions, &c., Deceased, Discharged, or Run during the year - - - - -	691 4 11
				Public money lost by foundering of Her Majesty's Ship "Vanguard"	247 12 8
				Defalcations by Serjeants in the Marine Divisional Pay Office at Plymouth in connection with the deposit of allotments, and remittances of Marines serving afloat, in the Marine Divisional Savings Bank, and with misappropriation of cash received from Marines serving on shore for deposit in the bank, and falsification of the bank accounts - - - - -	129 10 6
				Claims on Private Individuals, &c., abandoned on account of death or inability of debtors to pay, and other amounts written off, being found, from various causes, to be irrecoverable - - -	55 - 6
				£.	2,680 8 4

## MEMORANDUM.

THE Old Store and Extra Receipt Moneys for the Year 1875-76, amounting to 397,197 *l.* 17 *s.* 8 *d.* (as brought to account under the following detailed Heads), have been paid over to the Exchequer, in conformity with the Treasury Minute of the 2nd May 1848, instead of being appropriated as heretofore to the Navy Estimates.

HEADS OF OLD STORE AND EXTRA RECEIPT MONEYS.	Amount of Old Store Moneys.	Amount of Extra Receipts.	TOTAL.	Vote of the Navy Estimates under which formerly Appropriated.
	£. s. d.	£. s. d.	£. s. d.	
Discharges of Seamen and Marines - - - - -	- - -	5,754 - -	6,675 18 6	No. 1.
Effects of Seamen and Marines forfeited by Desertion - - - - -	- - -	856 1 -		
Barrack Schools (Contributions towards Education) - - - - -	- - -	65 17 6		
Repayments, Victualling (per-centage, &c. on Supplies of Stores, &c.) - - - - -	- - -	393 6 4	13,545 15 1	No. 2.
Old Stores, Victualling (Sales) - - - - -	10,233 - 9	- - -		
Old Seamen's Clothing (Sales) - - - - -	2,919 8 -	- - -		
Sale of Charts - - - - -	- - -	5,784 9 3	6,044 9 3	No. 5.
Royal Naval College (Fees from private Students) - - - - -	- - -	260 - -		
Barrack Rents (Rents of Canteens and Shops) - - - - -	- - -	77 6 -	77 6 -	No. 9.
Old Stores, Naval (Sales) - - - - -	82,834 14 10	- - -	259,799 1 7	No. 10.
Sale of Ships - - - - -	- - -	5,293 9 3		
Proceeds of the Sale of Old Ships - - - - -	127,506 6 3	- - -		
Repayments, Naval (per-centage on Supplies, &c.) - - - - -	- - -	44,140 2 11		
Per-centage on Cabin and Residential Furniture, for its use - - - - -	- - -	24 8 4		
Old Stores, Medical (Sales) - - - - -	522 6 10	- - -	580 3 8	No. 12.
Repayments, Medical (per-centage on Supplies of Stores, &c.) - - - - -	- - -	57 16 10		
Sale of Naval Property - - - - -	- - -	17 12 6	27,516 3 10	No. 14.
Rents of Naval Premises - - - - -	- - -	4,227 6 8		
Penalties, Fines, &c. - - - - -	- - -	5,498 10 10		
Sick Mess Fund (Balance on Abolition of) - - - - -	- - -	7,962 17 -		
Miscellaneous Receipts - - - - -	- - -	9,809 16 10		
Contributions from Naval Prize Fund - - - - -	- - -	2,000 - -	1,993 12 4	No. 16.
Less—Contributions in Aid of Superannuation Fund (Debit Balance arising from the Repayment of Contribution) - - - - -	- - -	6 7 8		
Repayments, Army Service - - - - -	- - -	679 3 -	2,803 12 2	No. 17.
Old Stores, Army Service (Sales) - - - - -	2,124 9 2	- - -		
Contributions from Indian Government on account of Expense of Fleet on the Indian Station - - - - -	- - -	67,730 11 11	67,730 11 11	
Credit of Prior Year's Account - - - - -	- - -	10,431 3 4	10,431 3 4	
		£. 397,197 17 8		

Votes General			
	£.	s.	d.
1	846	2	8
2	1,369	19	3
3	1,040	17	1
4	9	5	-
5	138	14	9
6	196	9	10
7	1,338	7	10
8	4	6	3
9	-	-	-
	£.		

	£.	s.	d.
Old Store Moneys - - - - -	226,140	5	10
Extra Receipts - - - - -	171,057	11	10
£.	397,197	17	8

H. Walker,  
Accountant General of the Navy,  
and Comptroller of Navy Pay.

**BALANCE SHEET**, showing the **LEDGER BALANCES** on the 30th September 1876, the Date on which the Annual Account of the **NAVAL RECEIPT AND EXPENDITURE** was closed ;—also, the Proportion of the **AVAILABLE BALANCE** remaining on that Day applicable to the still open Account for 1876-77.

*N.B.*—To obviate the necessity of introducing into the following Statement the separate results of all the Accounts, the Balances in the Ledger are shown in *Classes*, except in those instances in which it has been deemed advisable to add special explanations, with the view of illustrating the principle upon which the Account has been prepared, and the final Balance struck. The Account of Receipt and Expenditure is one of Receipts and Payments within the Year, and has been kept open for Six Months after the Expiration of the Year to which it refers, under the authority of Parliament, that all Payments posted within that period, relating to the service of the past year, might be included in it, and the whole Expenditure on Imprest be finally audited before declaring the Balance. The postings of the Receipts and Payments comprised in that Account being therefore spread over a period of Eighteen Months, the proof of the correctness of the Expenditure, as compared with the Grants for 1875-76, may be shown either by the Balances which remained in the Books at the date to which the Account of Receipt and Expenditure extends (viz., 31st March 1876), or by those which remained at the Date when it was definitively closed (viz., 30th September 1876). The Balance Sheet of the latter date is given, as it exhibits a more complete Statement of the Accounts.

Number of Accounts.	DESCRIPTION OF ACCOUNTS.	Dr.	Cr.
		£. s. d.	£. s. d.
1	HER MAJESTY'S EXCHEQUER: For Balance of Grants for the Naval Service unissued on the 30th September 1876 - - - - -	5,588,872 - -	- -
1	HER MAJESTY'S EXCHEQUER (Greenwich Hospital Account): For Balance of Grants for the Service of Greenwich Hospital and School, unissued on the 30th September 1876 - - - - -	116,540 - -	- -
1	HER MAJESTY'S EXCHEQUER (Old Store and Extra Receipt Moneys Account): There is no Balance on this Account, the Transfer Bill to the Exchequer being charged in the Ledger to the debit of the Account simultaneously with the transfer of the Net Credits on account of the Naval Old Store and Extra Receipt Moneys from their respective heads - - - - -	- -	- -
1	HER MAJESTY'S PAYMASTER GENERAL (Cash): For Navy Cash Balance on the 30th September 1876 - - - - -	91,042 10 6	- -
1	BILLS PAYABLE: For Bills issued for Payment, but not paid on the 30th September 1876 - - - - -	- -	97,661 12 10
1	OUTSTANDING BILLS, DRAFTS, &c.: For Bills drawn by Accounting Officers not presented for payment, and which have been outstanding for more than six years - - - - -	- -	4,672 14 10
1	SALARY LISTS: For amount of Salaries of the Admiralty establishment in London unpaid on the 30th September 1876 - - - - -	- -	3,762 10 11
1	PRIZE REMITTANCES: For Repayments from Prize Funds, of Prize Money paid by Naval Accountants, which payments were not brought to account in the Ledger on the 30th September 1876 - - - - -	- -	1,646 9 11
1	GREENWICH HOSPITAL INCOME ACCOUNT: For Receipts due to Greenwich Hospital Funds for the Freight of Treasure, &c., in Her Majesty's Ships, &c., the transfer to those Funds not having been made on the 30th September 1876 - - - - -	- -	402 11 2
9	- - - - - Carried forward - - - - - £.	5,796,454 10 6	108,145 19 8



Number of Accounts.	DESCRIPTION OF ACCOUNTS.	Dr.			Cr.		
		£.	s.	d.	£.	s.	d.
9	- - - - - Brought forward - - -	5,798,454	10	6	108,145	19	8
1	PROPERTY AND INCOME TAX, 1875-76: For Deductions on account of the Naval Department, remaining to be paid to the Receiver General of Inland Revenue (Stamps and Taxes), for the Year ended 31st March 1876 - - - -	-	-	-	3,894	4	-
1	PROPERTY AND INCOME TAX, 1876-77: For Deductions on account of the Naval Department, remaining to be paid to the Receiver General of Inland Revenue (Stamps and Taxes), for the Year ending 31st March 1877 - - - -	-	-	-	506	12	1
1	CADETS' PRIVATE EXPENDITURE ACCOUNT: For Balance of Cadets' personal expenses in Her Majesty's Ship "Britannia," remaining to be repaid to Naval Funds out of the Cadets' Pay, or by their Parents and Guardians - - - -	886	7	4	-	-	-
1	NAVAL CADETS' EXPENSES IN TRAINING SHIPS: For Balance of Amounts advanced to the Naval Department by the Parents and Guardians of Naval Cadets, to defray the expenses incurred for their Messing, Servants, Sports, &c., while under training in Her Majesty's Ship "Britannia," and in sea-going Training Ships - - - -	-	-	-	9,830	7	7
1	PRIVATE ALLOWANCES TO MIDSHIPMEN: For Balance of the Regulation Allowances deposited with the Naval Department by the Parents and Guardians of Midshipmen, to enable them to maintain an officer-like appearance on board ship, and to provide for additions to their Mess - - - -	-	-	-	12,450	6	9
1	DEPOSITS FOR MARINE OFFICERS' EQUIPMENTS: For Amount of Outstanding Deposits on account of the outfit of Gentlemen Cadets at the Royal Naval College, Greenwich, previous to their receiving Commissions in the Royal Marines, the Accounts for the Disbursements of such Deposits not having yet been allowed - - - -	-	-	-	2,055	11	3
1	MARINE DIVISIONAL LIBRARY FUND, &c.: For Amount standing to the Credit of the Divisional Library and Recreation Room Fund, &c., being the unexpended balance of the fines inflicted upon Marines for Drunkenness - - - -	-	-	-	30	17	7
1	COASTGUARD COMPASSIONATE FUND: For Amount standing to the Credit of the Fund, being the unex- pended balance of the fines inflicted on Coastguard men for Drunkenness and minor offences - - - -	-	-	-	25	16	8
1	INTERMEDIATE ACCOUNTS: For Advance by the Marine Divisional Paymaster at Plymouth on account of the Marine Recruiting Service in 1876-77, the debit for which had not been brought to account on the 30th Sep- tember 1876 - - - -	-	-	-	1	2	-
1	DEBTS OF MARINES AT DIVISIONS: For Balance of Debts incurred by Marines on account of Neces- saries, Boots, &c., supplied for their use beyond those articles issued at the cost of the public; Fines for Irregularities and other charges to be recovered by Stoppages from their future Wages -	794	8	4	-	-	-
19	- - - - - Carried forward - - - £.	5,798,135	6	2	136,940	17	7



Number of Accounts.	DESCRIPTION OF ACCOUNTS.	Dr.	Cr.
		£. s. d.	£. s. d.
19	- - - - - Brought forward - - -	5,798,135 6 2	136,940 17 7
5	CREDITS OF HOSPITAL PATIENTS: For Value of Money and Effects of deceased and other Patients in Haslar, Plymouth, Haulbowline, Yarmouth, and Jamaica Hospitals, taken on charge by the Accountant Officers for those Establishments until claimed - - - - -	- - -	662 18 4
1	CREDITS OF PRISONERS: For Money belonging to Prisoners taken on charge by the Governor of Lewes Naval Prison - - - - -	- - -	58 16 6
1	EFFECTS OF DECEASED SEAMEN AND MARINES: For Amounts realised by the Sale of the Effects of deceased Sea- men and Marines; and for Cash found with their effects: remaining to be paid over to their legal representatives - - -	- - -	3,493 2 9
1	NAVAL SAVINGS BANKS: For Deposits in Naval Savings Banks by Seamen and Marines of the Royal Navy - - - - -	- - -	130,624 12 -
5	MARINE DIVISIONAL PAYMASTERS: For Balances standing as Imprest, &c., against them on the 30th September 1876 - - - - -	178,830 6 6	—
32	NAVAL AND VICTUALLING CASHIERS, STOREKEEPERS, AND ACCOUNT- ANTS, PAYMASTER OF ADMIRALTY CONTINGENCIES, &c., AT HOME: For Balances standing as Imprest, &c., against them on the 30th September 1876 - - - - -	1,070,858 4 2	—
35	NAVAL AND VICTUALLING STOREKEEPERS AND ACCOUNTANTS, HOSPITAL INSPECTORS, &c., ABROAD: For Balances standing as Imprest, &c., against them, and for Credit Balances on the 30th September 1876 - - - - -	163,767 10 4	3,012 3 4
394	PAYMASTERS OF HER MAJESTY'S SHIPS AND VESSELS, PAYMASTERS OF THE COAST GUARD ON SHORE, RECRUITING OFFICERS, AND CONSULS: For Balances standing as Imprest against them, and for Credit Balances on the 30th September 1876 - - - - -	1,343,465 18 10	385 11 5
16	MISCELLANEOUS ACCOUNTANTS: For Balances standing as Imprest, &c., against them on the 30th September 1876 - - - - -	8,151 2 -	—
347	PRIVATE INDIVIDUALS: For value of Naval Stores supplied to, and for Wages of Dockyard Workmen employed on behalf of, Private Individuals in the repair of Vessels, &c., not yet repaid, and for repayments for Work done, &c., the charges for which have not yet been brought to Account - - - - -	10,518 1 4	1,978 13 2
856	- - - - - Carried forward - - - £.	8,573,726 9 4	277,156 1 1

Number of Accounts.	DESCRIPTION OF ACCOUNTS.	Dr.			Cr.		
		£.	s.	d.	£.	s.	d.
856	- - - - - Brought forward - - -	8,573,726	9	4	277,156	15	1
I	J. LAMONT, HONG KONG (ON BEHALF OF THE WHAMPOA DOCK COMPANY): For Balance of Amounts advanced on the 11th February 1864 and 20th March 1866, to assist him in the construction of a Dock at Aberdeen, Hong Kong - - - - -	5,842	7	11	—		
1	ANGLO-MALTESE HYDRAULIC DOCK COMPANY: For Balance of Amounts advanced on the 28th February and 14th April 1873, to assist the Company in the construction of a Hydraulic Dock at Malta - - - - -	18,000	—	—	—		
6	ADMIRALTY BROKERS AND AUCTIONEERS, FOR THE PURCHASE OF NAVAL PROVISIONS AND STORES, AND FOR THE SALE OF OLD SHIPS AND STORES: For Balances standing as Imprest, &c., against them, and for Credit Balances on the 30th September 1876 - - - - -	30,861	9	7	17,974	18	5
J	ROYAL NAVAL CANTEEN, MALTA: For Balance of Expenses on account of the Naval Canteen, Malta, outstanding on the 30th September 1876 - - - - -	779	—	7	—		
1	TREASURY CHEST ADVANCE ACCOUNT, 1875-76: For Balance due from the Naval Department on account of Advances from the Chests in the Colonies, for Naval Services in 1875-76 - - - - -	—	—	—	9,538	8	9
1	TREASURY CHEST ADVANCE ACCOUNT, 1876-77: For Amount outstanding on the repayments by the Naval Department, on account of Advances from the Chests in the Colonies, for Naval Services in 1876-77 - - - - -	360,187	—	2	—		
1	TREASURY CHEST ACCOUNT, 1876-77: For Amount of Advances from the Chests on account of Naval Services, as per advices received in 1876-77 - - - - -	—	—	—	264,644	18	5
6	TREASURY: For Balance of Amounts received from the Royal Bounty Fund, to pay Gratuities to Widows of Officers and Men lost in Her Majesty's Ship "Captain" - - - - - For Advances out of Naval Grants in connection with the entertainment of members of the Eclipse Expedition - - - - - For Amount due to Naval Funds on account of Gratuities and Prize Pay to Officers and Men of the Navy employed in the Ashantee Expedition paid during 1875-76 and 1876-77 - - - For portion of the Indemnity received from the Guatemalan Government in respect of the outrage on Mr. Magee - - - - - For Salaries of the members of the Scientific Staff; for expenses connected with their messing in H.M.S. "Challenger"; for Stores purchased, and for other miscellaneous Payments for the Deep Sea Exploring Expedition - - -	—	—	—	8	1	1
		17	—	—	—		
		4,494	4	9	—		
		—	—	—	4,643	—	1
		£.	s.	d.			
		3,195	6	4	—		
874	- - - - - Carried forward - - - £.	3,195	6	4	8,993,907	12	4
					573,966	1	10

Number of Accounts.	DESCRIPTION OF ACCOUNTS.	Dr.	Cr.
		£. s. d.	£. s. d.
874	Brought forward - - -	3,195 6 4	8,993,907 12 4
	<i>Treasury—continued.</i>		
	For Salaries of the members of the Scientific Staff of the Arctic Expedition, and expenses in connection with their Messing - - -	261 19 4	
	For Expense of the Entertainment of a shipwrecked American Naval Officer in H.M.S. "Myrmidon," and payments of Indian Batta to Officers for Service in the Abyssinian Expedition - - -	53 7 1	
		3,510 12 9	
	Less,—		
	Amount recovered on account of an overpayment for Freight of Specie - - -	5 12 6	
			3,505 - 3
1	SECRETARY OF STATE FOR WAR :		
	For Advances out of Naval Funds on account of Stores transferred by the Military Authorities in Japan to the Marine Battalion there - -	1,807 1 4	
	For value of Naval Stores supplied from Home and Foreign Dockyards, and for Wages of Dockyard Workmen, while employed on Services relating to the War Department - -	12,773 11 11	
	For value of Provisions, Bedding, &c., supplied for the Control Service; and for Groceries purchased for the War Department by Admiralty Brokers - - -	25,845 12 -	
	For value of Gas supplied for the service of the War Department; for Pensions paid by Naval Accountants; for Travelling Expenses, &c., of Dockyard Officers when employed on the Service of the War Department; for Ordnance Stores obtained from Bombay Dockyard for use in Her Majesty's Ships, and for balance of other Miscellaneous Charges - - -	8,608 12 8	
		49,034 17 11	
	Abate,—		
	For balance of amounts recovered from Seamen and Marines on account of Arms damaged, lost by neglect, &c. - - -	255 1 5	
	And from Marines for fraudulent enlistment - - -	113 9 11	
	For Expenses incurred by the War Department in connection with the instruction in the Army Medical School, Netley, of Candidates for the Naval Medical Service, &c., the repayment to Army Funds not having been brought to Account on the 30th September 1876 - - -	1,280 4 6	
		1,648 15 10	
			47,386 .2 1
875	Carried forward - - -	£.	9,044,798 14 8
			573,966 1 10

Number of Accounts.	DESCRIPTION OF ACCOUNTS.	Dr.			Cr.		
		£.	s.	d.	£.	s.	d.
875	- - - - - Brought forward - - -	9,044,798	14	8	573,966	1	10
1	SECRETARY OF STATE FOR WAR (NAVAL AND GREENWICH HOSPITAL PENSION ACCOUNT, 1876-77):						
	For Advances on account of the Payment of Pensions, in 1876-77	268,000	-	-	-		
1	SECRETARY OF STATE FOR FOREIGN AFFAIRS:						
	For Advances out of Naval Grants on account of the Passages of Consular Officers; for the value of Naval Stores supplied for Consular Services, for Expenses incurred in connection with the Niger Expedition, and for other Miscellaneous Charges - - -	803	-	2	-		
1	COLONIAL DEPARTMENT:						
		£.	s.	d.			
	For value of Provisions, Fuel and Stores purchased; for Freight of Stores, hire of a Transport, &c., in connection with the hostilities on the West Coast of Africa - - -	9,454	19	9			
	For Pay of the Officers and Crew of the "Nelson," navigating the Vessel to Victoria; for value of Provisions supplied, and for other small Expenses - - - - -	8,427	4	8			
	For proportion of the Pay of the Naval Officer in charge of the Naval Establishment at Gibraltar, for performing the Duties of Captain of the Port - - - - -	126	18	7			
	For Advances out of Naval Grants on account of the Conveyance of Stores to Vancouver's Island - - - - -	518	1	1			
	For Advances out of Naval Grants on account of the Pay and Allowances to Officers, &c., of the Coastguard Station at Heligoland - - -	228	4	10			
	For value of Stores expended in Her Majesty's Ships when employed on Colonial Service - - -	119	17	3			
	For Wages of Dockyard Artificers making and repairing Stores for Colonial Service; and for Naval Stores and Provisions supplied - - -	1,174	7	5			
	For Passages, &c., in the Colonies, of Officers connected with the Colonial Department; and other Miscellaneous Charges - - - - -	558	2				
	Abate,—	20,607	16	4			
	For Excess of Credits to Naval Funds on account of Coast Surveys in progress in Australia - - - - -	631	6	7			
	For Amount received for the Passages of Officers connected with the Colonial Department; for Colonial Pay to Marines, &c., in Queensland, &c., the Charges for which had not been brought to account on the 30th September 1876 - - -	567	15	7			
		1,199	2	2			
		19,408	14	2			
878	- - - - - Carried forward - - - £.	9,333,010	9	-	573,966	1	10



Number of Accounts.	DESCRIPTION OF ACCOUNTS.	Dr.			Cr.		
		£.	s.	d.	£.	s.	d.
878	- - - - - Brought forward - - -	9,333,010	9	-	573,966	1	10
1	SECRETARY OF STATE FOR INDIA IN COUNCIL (TROOP SERVICE ACCOUNT):  For Value of Naval Provisions, Medical and Transport Stores supplied for Wages of Dockyard Workmen and value of Dockyard Stores expended in making good the defects of the Indian Troop Ships "Crocodile," "Euphrates," "Jumna," "Malabar," and "Serapis," and for other Miscellaneous Expenses incurred in connection with these Vessels - - - - -	48,674	18	1	-	-	-
1	SECRETARY OF STATE FOR INDIA IN COUNCIL (MISCELLANEOUS ACCOUNT):  For Value of Naval Stores supplied from Her Majesty's Dockyards, and for Wages of Dockyard Workmen employed in Services relating to India - - - - -  For Value of Naval Provisions, Bedding, &c., supplied for Indian Service - - - - -  For Advances out of Naval Grants in payment of the Passages of Officers on Indian Service  For Expenses of Officers superintending the construction, fitting, trial, &c., of the "Abyssinia," "Magdala," and "Tenasserim"; for the entertainment, in Her Majesty's Ships, of Officers on Indian Service; for Expenses in connection with ground at Port Said; and for other Miscellaneous Charges - - - - -  Less,— For Advance on the 29th February 1868 to Mr. F. N. Bowling, Transport Officer in Abyssinia, by the Treasurer of the Abyssinian Field Force, which Credit has not yet been accepted by the Indian Government - - - - -  For Advances by the Indian Government on account of the Instruction of Indian Students by Civil Engineers in Her Majesty's Dockyards, &c. - - - - -	11,581 2,047 13,856 2,373 29,858 500 202 702	4 5 5 18 13 - 13 -	7 3 3 4 5 - -	-	-	-
		29,156	-	5	-	-	-
1	POST OFFICE DEPARTMENT (PACKET SERVICE ACCOUNT):  For Advances out of Naval Grants on account of the Expenses incurred by a Naval Officer in surveying Mail Steamer, and other Incidental Charges - - - - -	8	14	2	-	-	-
1	POST OFFICE DEPARTMENT (MISCELLANEOUS ACCOUNT):  For Value of Naval Stores supplied for Telegraph Service, &c. -	15	5	-	-	-	-
882	- - - - - Carried forward - - - - - £.	9,410,865	6	8	573,966	1	10

Number of Accounts.	DESCRIPTION OF ACCOUNTS.	Dr.		Cr.	
		£.	s. d.	£.	s. d.
882	Brought forward - - - - -	9,410,865	6 8	573,966	1 1
1	DIRECTORS OF CONVICT PRISONS:				
	For Payments to Dockyard Workmen, and for Value of Naval Stores supplied for Prison Services - - - - -	£.	s. d.		
		112	10 10		
	For Advances out of Naval Grants on account of Work performed by a Contractor; for Freight and Carriage of Stores; and for other small Expenses connected with Prison Services - - - - -	285	5 2		
			397 16 -		
1	BOARD OF TRADE (ROYAL NAVAL RESERVE ACCOUNT):				
	For Advances out of Naval Grants on account of Expenses incurred for the Royal Naval Reserve in 1876-77 - - -	36,201	13 3		
1	BOARD OF TRADE (MARINE DEPARTMENT):				
	For Advances out of Naval Grants to Workmen employed in repairing the "Richmond," Lighthouse Tender at Jamaica, and for value of Naval Stores expended thereon - - -	£.	s. d.		
		542	12 5		
	For Fees paid to Naval Officers who served in Naval Courts Abroad; and to Naval Surgeons for Medical Inspection of Valparaiso Hospital; for Expenses incurred in the relief of distressed British Seamen; and for other Miscellaneous Payments - - - - -	240	10 -		
		783	2 5		
	Abate,—				
	Amount realised by the Sale of Effects of a Merchant Seaman, &c., and repayments by the Board of Trade on account of Expenses, not yet brought to account - - - - -	50	15 -		
			782 7 5		
1	PRIVY COUNCIL OFFICE:				
	For Value of Naval Stores supplied, and for Wages of Dockyard Workmen employed fitting and repairing Vessels for Quarantine Service - -	2,817	8 4		
	Less—Sums realised by the Sale of Stores returned from Quarantine Service - - -	293	12 10		
			2,023 16 6		
1	COMMISSIONERS FOR THE REDUCTION OF THE NATIONAL DEBT:				
	For portion of the Amount standing to the Credit of Depositors in Naval Savings Banks transferred to the Account of the Commissioners for the Reduction of the National Debt at the Bank of England for investment, and for dividends thereon - - -	107,690	16 -		
1	LOCAL GOVERNMENT BOARD:				
	For travelling Expenses incurred in connection with the fitting of the "Goliath" as a Training Ship - - - - -	2	- 6		
885	Carried forward - - - £.	9,557,918	15 4	573,966	1 10

Number of Accounts.	DESCRIPTION OF ACCOUNTS.	Dr.	Cr.
		£. s. d.	£. s. d.
888	- - - - - Brought forward - - -	9,557,913 15 4	573,966 1 10
1	COMPTROLLER OF HER MAJESTY'S STATIONERY OFFICE:		
	For Payments out of Naval Grants in the purchase of Stationery for the Naval Service -	1,511 8 10	
	Abate,—		
	Value of Books supplied through the Naval Department to the "Meeanee," Military Hospital Ship, not yet repaid - - -	53 8 2	
	Value of Books lost in Her Majesty's Ships, and recovered from the Men's Pay - - -	275 - 8	
		328 8 10	
		1,183 - -	
1	COMMISSIONERS OF HER MAJESTY'S WORKS AND PUBLIC BUILDINGS:		
	For Advance out of Naval Grants to meet the expense of maintaining the Admiralty Garden in 1876-77 - - -	19 13 5	
1	SCIENCE AND ART DEPARTMENT:		
	For Advances out of Naval Grants in connection with the loan exhibition of Scientific Instruments at South Kensington, &c. -	60 19 7	
1	LORD HIGH ADMIRAL (ON ACCOUNT OF COLONIAL DOCKS):		
	For Balance of Advances made to Naval Funds out of the Consolidated Fund, for the purposes of the Loans under the Colonial Docks Loan Act of 1865 (28 & 29 Vict. c. 106) - - -	- - -	27,168 1 11
1	BOARD OF CUSTOMS:		
	For Value of Naval Provisions supplied for use in the Revenue Cruiser "Vigilant," and for Expenses incurred by the Naval Department in clearing Customs Vessels at Tarbert - - -	13 18 5	
1	COMPTROLLER AND TREASURER OF HIS ROYAL HIGHNESS THE PRINCE OF WALES' HOUSEHOLD:		
	For Payment of Wages to Dockyard Workmen at Portsmouth, repairing a Steam Launch - - - - -	35 16 7	
1	COMMISSIONERS OF IRISH LIGHTS:		
	For Value of Naval Stores supplied for the service of a Lightship - - -	8 18 4	
1	BOARD OF PUBLIC WORKS (IRELAND):		
	For Amount transferred to the credit of the Board for payment as Compensation, for Disturbance, to the Tenant in occupation of Land required for the Curracloe Coast Guard Station - - -	40 - -	
1	PENSIONS COMMUTATION BOARD:		
	For Amount of the Regulation Fee received from an Officer on the withdrawal of his application for commutation of his Retired Pay - - - - -	- - -	3 3 -
897	- - - - - Carried forward - - - £.	559,276 1 8	601,137 6 7

Number of Accounts.	DESCRIPTION OF ACCOUNTS.	Dr.			Cr.		
		£.	s.	d.	£.	s.	d.
897	- - - - - Brought forward - - -	9,559,276	1	8	601,137	6	
1	INLAND REVENUE DEPARTMENT (IRELAND):						
	For Value of Telescopes supplied to the Constabulary Office, Dublin - - - - -	10	10	4			
1	EGYPTIAN GOVERNMENT:						
	For Advances out of Naval Grants on account of the Expenses of Admiralty Inspectors, in connection with work for the Egyptian Government - - - - -	1	19	9			
1	GERMAN GOVERNMENT:						
	For Value of Naval Stores supplied to the German Vessel "Hertha" at Hong Kong - - - - -	248	5	9			
1	GREEK GOVERNMENT:						
	For Advances to Greek Officers during their service in Her Ma- jesty's Fleet - - - - -	106	14	7			
1	ITALIAN GOVERNMENT:						
	For Expense of recovering an Anchor for the Italian Vessel "Marietto Gatterno," at Devonport - - - - -	1	16	2			
1	JAPANESE GOVERNMENT:						
	For Advances out of Naval Grants on account of the Pay and other expenses of Japanese Officers serving in Her Majesty's Navy -	153	17	1			
1	MOORISH GOVERNMENT:						
	For Payments out of Naval Grants to Workmen at Gibraltar for services performed at Tangier - - - - -	30	1	5			
1	SPANISH GOVERNMENT:						
	For Value of Provisionssupplied in 1872-73, and of Coals supplied in 1874-75 - - - - -	90	1	1			
1	SWEDISH GOVERNMENT:						
	For Amount repaid to Naval Funds on account of the expense of messing a Swedish Officer, the charge not having yet been brought to account - - - - -					45	6
1	TURKISH GOVERNMENT:						
	For Advances out of Naval Grants on account of the Expenses incurred by Admiralty Officers superintending work in progress for the Turkish Government, &c. - - - - -	1,062	2	10			
907	- - - - - Carried forward - - - £.	9,560,981	10	8	601,182	12	4



Number of Accounts.	DESCRIPTION OF ACCOUNTS.	Dr.			Cr.			
		£.	s.	d.	£.	s.	d.	
907	- - - - - Brought forward - - -	9,560,981	10	8	601,182	12	4	
1	UNITED STATES GOVERNMENT: For Value of Naval Stores supplied to an American War Vessel at Hong Kong - - - - -	75	-	4	-	-	-	
1	COLONIAL GOVERNMENT OF THE STRAITS SETTLEMENTS (PERAK EXPEDITION ACCOUNT): For Value of Naval Provisions, Stores, &c., expended by the Naval Department in connection with the Expedition - - -	3,248	-	-	-	-	-	
1	DONATION WAR BATTÁ MONEY TO MARINE BRIGADE IN CHINA: For Balance remaining unpaid out of the Amount received from the War Department on account of the difference between Indian and Imperial Pay and Allowances to Marine Officers, &c. -	-	-	-	478	6	10	
1	EAST INDIA WAR BATTÁ MONEY: For Balance remaining unpaid out of the Amount received from East India Government for distribution amongst the Officers and Seamen of Her Majesty's Ships employed in the Naval Brigade in India - - - - -	-	-	-	663	-	1	
1	KAHDING PRIZE MONEY ACCOUNT: For Balance remaining unpaid out of the Naval Share of the Booty captured from the Taepings at Kahding, by the combined French, Chinese, and British Forces - - - - -	-	-	-	64	5	1	
1	CRIMEAN FIELD ALLOWANCE ACCOUNT: For Balance remaining unpaid out of the Amount received from the War Department for payment of Field Allowance to Marines employed in the Crimea - - - - -	-	-	-	1	2	-	
25	OLD STORE AND EXTRA RECEIPT MONEYS ACCOUNTS: For Receipts on Account of the Sale of Unserviceable Naval Stores, &c., paid over Quarterly to Her Majesty's Exchequer -	3	6	2	50,381	9	-	
	NET AVAILABLE BALANCE on the 30th September 1876 -	-	-	-	8,911,537	1	10	
938		£.	9,564,307	17	2	9,564,307	17	2

Number of Accounts.	DESCRIPTION OF ACCOUNTS.	AMOUNT.
		£.   s.   d.
938	- - - - Net available Balance on the 30th September 1876 - - -	8,911,537   1   10
	As the foregoing Balances include Sums belonging to the Account for the Year 1876-77, the following Statement of the Amount due on the Grants for that Year is given, in order to show the state of the Grants for 1876-77, on the 30th September 1876, when the Account for the Year 1875-76 was closed, viz.:—	
		£.   s.   d.
	Grants for Naval Services for the Year 1876-77, per Act 39 & 40 Vict. c. 60 - - -	11,288,872   -   -
	Grants for Advances for Greenwich Hospital and School, per Act 39 & 40 Vict. c. 60 -	145,752   -   -
		11,434,624   -   -
	Deduct,—	
247	Net Expenditure for Naval Services for the Year 1876-77, passed to Account up to the 30th September 1876, the Date when the preceding Balances were struck - - -	2,428,484   -   11
38	Net Expenditure for Greenwich Hospital and School Services for the Year 1876-77, passed to Account up to the 30th September 1876, when the preceding Balances were struck -	18,511   19   1
		2,446,996   -   -
	Net Amount due on the Grants for 1876-77 - - - - -	8,987,628   -   -
		76,090   18   2
	Add,—	
	Surplus on the Grants for Greenwich Hospital and School Services for the Year 1875-76 - - - - -	2,638   18   4
	Excess of Expenditure beyond the Grants for Naval Services, 1875-76 - - -	78,729   16   6
	Less—Amount to be advanced out of the Vote of Credit for the Expenses of the Ashantee Expedition, authorised by Treasury Letter of 30th December 1876 -	3,218   14   3
1,223	Excess still remaining to be Voted for Naval Services - - - £.	75,511   2   3

Number of Accounts.	DESCRIPTION OF ACCOUNTS.		AMOUNT.		
			£.	s.	d.
1,223	The same result may be obtained from the Balance Account; ended 31st March 1876, viz.:—				
	Net available Balance on the Grants for Naval Services for 1875-76 on the Books on the 31st March 1876	£. s. d. 3,543,183 10 5	£. s. d. 3,649,682 16 11		
	Ditto - - on Grants for Advances for Green- wich Hospital and School for 1875-76 - -	106,499 6 6			
	Net Expenditure for Naval Services for the Year 1875-76, passed to Account subsequent to the 31st March 1876, when the preceding Balances were struck	3,621,913 6 11			
	Ditto - - for Greenwich Hospital and School Services, ditto	103,860 8 2	3,725,773 15 1		
	Add,—				
	Surplus on the Grant for Advances for Greenwich Hospital and School Services for the Year 1875-76				2,638 18 4
	Excess of Expenditure beyond the Grants for Naval Services, 1875-76				78,729 16 6
	Less—Amount to be Advanced out of the Vote of Credit for the Expenses of the Ashantee Expedition, authorised by Treasury Letter of 30th December 1876				3,218 14 3
1,223	Excess still remaining to be Voted for Naval Services	£.			75,511 2 3

(signed) *H. Walker,*  
Accountant General of the Navy, and  
Comptroller of Navy Pay.





NAVY (SURPLUSES AND DEFICITS, 1875-6).

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RETURN to an Order of the Honourable The House of Commons,  
dated 13 March 1877 ;—for,

COPY “of RETABULATION of the STATEMENT of the SURPLUSES and  
DEFICITS upon the GRANTS for NAVAL SERVICES for the Year ended  
the 31st day of March 1876.”

Admiralty, }  
13 March 1877. }

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THOS. WOLLEY,  
Chief Clerk.

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(*Mr. Algernon Egerton.*)

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*Ordered, by The House of Commons, to be Printed,*  
*13 March 1877.*

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## C O N T E N T S.

Explanation	PAGES
	3 to 8
Retabulation of the Navy Statement of the Surpluses and Deficits into Eight Divisions representing Heads of Service, with the view of enabling Final Expense and Manufacturing Accounts to be compiled, so as to be in accord with the Estimates, Appropriation Account, and Statement of Surpluses and Deficits, in order to make the previously varied, and apparently unconnected, Naval Accounts into one great Account	10 and 11
Division 1. Naval Yards; viz.:	
Retabulation of the Appropriation Account, giving Amounts for each Vote	14 and 15
Retabulation of the Statement of Surpluses and Deficits, giving the Amounts for the Sub-Heads of each Vote	18 and 19
Division 2. Victualling; viz.:	
Retabulation of the Appropriation Account, giving Amounts for each Vote	22 and 23
Retabulation of the Statement of Surpluses and Deficits, giving the Amounts for the Sub-Heads of each Vote	26 and 27
Division 3. Medical; viz.:	
Retabulation of the Appropriation Account, giving Amounts for each Vote	30 and 31
Retabulation of the Statement of Surpluses and Deficits, giving the Amounts for the Sub Heads of each Vote	34 and 35
Division 4. Marine; viz.:	
Retabulation of the Appropriation Account, giving Amounts for each Vote	38 and 39
Retabulation of the Statement of Surpluses and Deficits, giving the Amounts for the Sub-Heads of each Vote	42 and 43
Division 5. Coast Guard; viz.:	
Retabulation of the Appropriation Account, giving Amounts for each Vote	46 and 47
Retabulation of the Statement of Surpluses and Deficits, giving the Amounts for the Sub-Heads of each Vote	50 and 51
Analyses to show Amounts to be Debited to each Division; viz.:	
Vote 1. Wages, &c. to Seamen and Marines	53
Vote 2. Victuals and Clothing for Seamen and Marines	54
Vote 3. Admiralty Office	55
Vote 4. Coast Guard Service, Royal Naval Coast Volunteers, and Royal Naval Reserve	56
Vote 5. Scientific Branch	57
Vote 6. Dockyards and Naval Yards at Home and Abroad	58
Vote 7. Victualling Yards at Home and Abroad	59
Vote 8. Medical Establishments at Home and Abroad	60
Vote 9. Marine Divisions	61
Vote 10. Sect. I., Naval Stores	62
Vote 10. Sect. II., Steam Machinery and Ships Built by Contract	„
Vote 11. New Works, Buildings, Machinery, and Repairs	63
Vote 12. Medicines and Medical Stores	64
Vote 13. Martial Law and Law Charges	65
Vote 14. Miscellaneous Services	66
Vote 15. Half-Pay, Reserved Half-Pay, and Retired Pay, to Officers of the Navy and Royal Marines	67
Vote 16. Sect. I. Military Pensions and Allowances	68
Vote 16. Sect. II. Civil Pensions and Allowances	69
Vote 17. Army Department (Conveyance of Troops)	70

# RETABULATION

OF THE

## NAVY STATEMENT of SURPLUSES and DEFICITS

Into Divisions representing Heads of Service, with the view of enabling Final Expense and Manufacturing Accounts to be compiled, so as to be in accord with the Estimates, Appropriation Account, and Statement of Surpluses and Deficits, in order to make the previously varied and apparently unconnected Naval Accounts into one great Account.

### EXPLANATION.

IN 1869 a complete Retabulation of the Navy Estimates was worked out departmentally, in order to connect, more completely, the Navy Estimates, Appropriation Account, and Statement of Savings and Deficiencies, with the Ships' and Victualling Expense and Manufacturing Accounts, or any other Expense or Statistical Accounts that might in future be prepared and published.

The Report on this Retabulation of the Navy Estimates above referred to (and it is applicable to this Account) explained as follows :—

“ Division 1. Naval Yards, brings together into one view all the amounts of the various Votes appertaining to the Building, Repair, and Maintenance of the Fleet and Coast Guard, including Salaries, Wages, Stores, all New Buildings and Machinery, and Repairs to the same, Civil Pensions to Officers and Artificers who were previously employed in connection with such duties; and this Division would represent the money the House of Commons had granted to the Admiralty to use in their capacity of Shipbuilders like Napier and Laird, and Shipowners and users like Cunard and the Peninsular and Oriental Company, and will be accounted for in our Expense and Manufacturing Accounts under the head of Division 1, Naval Yards.

“ Division 2. Victualling, in like manner deals with the Expense of Victualling the Fleet, Coast Guard, &c.; and Victualling Expense and Manufacturing Accounts will deal with and account for expenditure under this Division.

“ It is proposed to compile Accounts for the other Divisions; at any rate the money will be accounted for at once in the Appropriation and Savings and Deficiencies Accounts in the same form and detail as to Divisions, as in this Retabulation.

“ Division 8. Control (strictly Central Control) includes Vote 3, Administrative, and part of Vote 5, Scientific, and that part of Vote 13, Martial Law and Law Charges, which appertains to the central control of the whole of the other Divisions. It includes also all New Works and Repairs for Admiralty Offices, and the Pensions of Officers who were employed in the central administration and control of the Navy. It is considered that this central administrative, scientific, and legal division, though essential to the due control of the Navy and Naval Establishments all over the world, yet exists in a great measure also for Parliamentary and National purposes, for giving varied and valuable information, and that it therefore bears little analogy to the expense of the management of a large mercantile establishment; and as it would be difficult, if not impossible, to apportion the amount accurately to the several Divisions, and to say how much is chargeable to each, even if it were admitted that it was fair under the circumstances to do so, a separate Division is given for these items of expenditure.

“ Another addition made in this Retabulation, and which will be carried through into the subsequent accounts, is that each Naval Yard and each Victualling Yard is treated as a separate Establishment, and stands upon its own merits; and each Yard will account for the money that has been disbursed on its behalf in final Expense and Manufacturing Accounts, debiting itself with such money in the same form and manner as in this Retabulation, and accounting for it in Ships Built, Repaired, and Maintained, or in Victualling Stores converted, or issues from each Yard, of Stores, whether converted or not, to Ships and Services.” Pages 14 to 19 “ show this for Naval Yards, Division 1, and” pp. 22 to 27 “ for Victualling Yards, Division 2. With respect to the Victualling Yards there is an additional column for credits. This is necessary, because these various credits do not appertain, and cannot therefore be attributed, to special yards.”

The explanation in the foregoing Report on the Retabulation of the Navy Estimates will sufficiently explain the object of this Retabulation of the Statement of Surpluses and Deficits.

It may be stated, however, in addition, that the Return herewith shows the disbursements on behalf of the eight great Divisions into which Naval Expenditure has been divided, to be as follows :

	£.
"Division 1. NAVAL YARDS," shows that the disbursements from each Vote on behalf of shipbuilding, repairing and maintaining for the whole of our eight Home and thirteen Foreign Dockyards, amount in the whole to - - - - -	4,214,737
"Division 2. VICTUALLING," shows in like manner that the disbursements from the Votes for the Home and Foreign Victualling Yards and the Victualling of the Fleet and Coast Guard, &c., amount to -	1,136,833
"Division 3. MEDICAL," shows that similar disbursements from the Votes for Medical Service are - - - - -	159,737

In like manner the disbursements from the various Votes for other Services or Divisions are shown to be as follows:—

Division 4. MARINE - - - - -	597,674
Division 5. COAST GUARD - - - - -	509,349
Division 6. TRANSPORT - - - - -	221,873
Division 7. FLEET - - - - -	3,712,885
Division 8. CONTROL, &c. - - - - -	348,155

The total, including amounts written off as irrecoverable, viz. - - -	2,680
being the same as the total disbursements, as shown in the already published Appropriation Account and Statement of Surpluses and Deficits, viz. -	10,903,923

In the various Divisions is included the amount, viz. - - - - -	3,218
spent on behalf of the Ashantee Expedition, so that the normal expenditure for the Navy for the year would be only - - - - -	10,900,705

As against the grants by the House, of - - - - -	10,825,194
--	------------

Turning from this General Abstract of the whole amount of the Navy Estimates and Expenditure to page 14, it will be seen that the amounts disbursed from each Vote for Division 1, Naval Yards, are first given, amounting to - - - - -

And that this Sum is in the succeeding columns divided into the amounts from each Vote disbursed on behalf of each of the seven Naval Home Yards, the totals of Naval Yards Abroad, and the totals of Other than Yards, such as Ships built by Contract, and other sums which do not appertain to Special Yards.

This shows the disbursements from the Votes on behalf of each Naval Yard, &c. to be as follows:—

	Expenditure.	Grant, or assumed Grant.
	£.	£.
Deptford - - - - -	84,097	148,014
Chatham - - - - -	723,502	710,338
Sheerness - - - - -	230,148	242,739
Portsmouth - - - - -	1,025,562	1,065,271
Devonport and Keyham - - - - -	620,937	639,316
Pembroke - - - - -	237,024	275,780
Haulbowline - - - - -	29,856	39,693
Yards Abroad - - - - -	306,587	219,723
Other than Yards—Ships built by Contract, and other Sums which do not appertain to special Yards - - - - -	957,024	875,410
<b>TOTAL (Division 1) NAVAL YARDS - £.</b>	<b>4,214,737</b>	<b>4,216,284</b>



It may be necessary to state that the Form on pages 10 and 11 was, strictly speaking, prepared as a Retabulation of the Appropriation Account, which only gives the amount disbursed from each Vote, and does not give, as does the Statement of Surpluses and Deficits, the amounts disbursed on behalf of each Sub-Head of each Vote.

Hence the Retabulation of the Surpluses and Deficits Account, giving the Sub-Head details, is shown at page 18.

At page 22, "Division 2, VICTUALLING," in like manner is a Retabulation of the Appropriation Account, and at page 26, of the Statement of Surpluses and Deficits.

These show the disbursements on behalf of Victualling to be as follows:—

	Expenditure.	Grant, or assumed Grant.
	£.	£.
Deptford - - - - -	490,087	479,937
Gosport - - - - -	93,337	115,034
Plymouth - - - - -	86,569	92,862
Haulbowline - - - - -	15,332	25,004
Yards Abroad - - - - -	118,487	135,290
Other than Yards--Sums which do not ap- pertain to special Yards - - -	648,100	603,912
GROSS TOTAL - - -	1,451,862	1,452,039
Repayments - - - - -	315,029	345,761
NET TOTAL (Division 2) } VICTUALLING - - - } £.	*1,136,833	1,106,278

At page 30, "Division 3, MEDICAL," is a Retabulation of the Appropriation Account, and at page 34, of the Statement of Surpluses and Deficits. The Disbursements are as follows:—

	Expenditure.	Grant, or assumed Grant.
	£.	£.
Deptford Medical Store Depôt - - -	12,291	12,113
Medical Establishments { Haslar - - - - -	28,428	28,235
Plymouth - - - - -	21,310	21,270
Haulbowline - - - - -	2,295	2,396
Yarmouth - - - - -	8,334	8,141
Portland - - - - -	1,118	971
Chatham - - - - -	9,383	9,710
Deal - - - - -	2,242	2,149
Marine Infirmaries. { Portsmouth (Marine Infir- mary, Forton) - - -	Cr. 412	Cr. 342
Portsmouth (Marine Artil- lery Infirmary, Fort Cumberland) - - -	896	967
Plymouth - - - - -	1,187	1,369
Lewes Naval Prison Dispensary - - -	41	44
Other Medical Establishments, &c. at Home	1,316	1,314
Medical Establishments Abroad - - -	33,919	30,612
Other than Establishments, &c.—Sums which do not appertain to special Establishments	37,399	37,002
TOTAL (Division 3) MEDICAL - - £.	†159,737	155,951

\* Of this amount a sum of 206*l.* was defrayed out of the Vote of Credit to meet the Expenses of the Ashantee Expedition.

† Of this amount a sum of 4*l.* was defrayed out of the Vote of Credit to meet the Expenses of the Ashantee Expedition.

At page 38, "Division 4, MARINE," is a Retabulation of the Appropriation Account, and page 42, of the Statement of Surpluses and Deficits. The Disbursements are as follows:—

	Expenditure.	Grant, or assumed Grant.
	£.	£.
Chatham - - - - -	73,148	73,109
Portsmouth Marine Barracks, Forton -	72,840	72,456
Portsmouth Marine Artillery Barracks -	101,954	101,875
Plymouth - - - - -	74,831	73,073
Walmer Recruiting Depot - - -	57,554	57,218
Total Marine Divisions - - -	380,322	377,731
Other than Divisions—Sums which do not appertain to special Divisions - - -	217,353	220,555
TOTAL (Division 4) MARINE - £.	597,675	598,286

At page 46, "Division 5, COAST GUARD," is a Retabulation of the Appropriation Account, and at page 50, of the Statement of Surpluses and Deficits. The Disbursements are as follows:—

	Expenditure.	Grant, or assumed Grant.
	£.	£.
Hull - - - - -	47,006	41,540
Harwich - - - - -	56,359	48,935
Newhaven - - - - -	76,550	67,064
Weymouth - - - - -	71,941	63,241
Liverpool - - - - -	34,945	30,798
Leith and Clyde - - - - -	59,989	44,743
Kingstown - - - - -	70,252	62,230
Limerick - - - - -	46,259	40,848
TOTAL Coast Guard Districts - -	454,301	399,399
Other than Districts—Sums which do not appertain to special Districts - - -	55,048	53,299
TOTAL (Division 5) COAST GUARD - £.	509,349	452,698

Division 6, TRANSPORT, Division 7, FLEET, and Division 8, CONTROL, are not sub-divided. The amounts disbursed from each Vote for these Divisions are shown at pages 10 and 11, and also in this Report, at page 4.

In order to sub-divide the Votes into Divisions, it was necessary that each Vote should be analysed, and that it should be ascertained how much of each Vote was chargeable to the several Divisions, and to the subdivisions of each Division. Hence, at pages 53 to 70 are given the results of this analysis.

It will be seen that the analysis of Vote 1 (page 53) shows that the total amount disbursed, *i.e.*, 2,609,930 *l.*, is chargeable as follows :—

	£.
To Division 4, MARINE - - - - -	261,516
To Division 5, COAST GUARD - - - - -	375,310
To Division 6, TRANSPORT - - - - -	40,517
To Division 7, FLEET - - - - -	1,928,707
To Division 8, CONTROL, &c. - - - - -	3,880
TOTAL - - - £.	2,609,930

In like manner the other Votes, 2 to 17, are analysed, and the results to be posted against each Division and Sub-division obtained.

This Retabulation is intended to form the Dr. side for future Expense, Manufacturing, or Statistical Accounts.

It further shows the actual amount disbursed on each Division, Sub-division, Yard, &c., from the Sub-head of each Vote.

Expense Accounts on this basis for Division 1, Naval Yards, and Division 2, Victualling, have been already presented to Parliament.

*H. WALKER,*  
Accountant General of the Navy, and  
Comptroller of Navy Pay.





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## RETABULATION OF THE NAVY STATEMENT

OF

### SURPLUSES AND DEFICITS

Into Divisions representing Heads of Service, with the view of enabling Final Expense and Manufacturing Accounts to be compiled so as to be in accord with the Estimates, Appropriation Account, and Statement of Surpluses and Deficits, in order to make the previously varied and apparently unconnected Naval Accounts into one great Account.

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## RETABULATION of the STATEMENT of SURPLUSES and DEFICITS.

RECAPITULATION of the APPROPRIATION ACCOUNT given at pages 2 & 3, of Parliamentary Paper 36, Session 1877, i. e.

<sup>6</sup> "Abstract Account of the Sum Expended, compared with the Sum Granted, for Naval Services, for the Year ended the 31st March 1876."

Number of Vote.		Page in Appropriation Account.	ABSTRACT.		Page in Vote.	Page in Estimate.	Expenditure, 1875-76.	Grant, 1875-76.	Page in Vote.	Page in Estimate.	Expenditure, 1875-76.	Grant, 1875-76.	Page in Vote.	Page in Estimate.	Expenditure, 1875-76.	Grant, 1875-76.
							£.	£.			£.	£.			£.	£.
NAVY EFFECTIVE SERVICES:																
1	2	WAGES to Seamen and Marines - - - - -	10	2,600,030	6	2,630,162	-	-	-	-	-	-	-	-	-	-
						† 7,900										
						* 731										
2	2	VICTUALS and CLOTHING for ditto - - - - -	12	1,142,877	11	1,106,581	-	-	-	-	-	-	2	-	1,043,586	1,007,961
						† 1,200										* 206
						* 206										
3	2	ADMIRALTY OFFICE - - - - -	14	187,809	14	183,916	-	-	-	-	-	-	-	-	-	-
4	2	COAST GUARD SERVICE, ROYAL NAVAL COAST VOLUNTEERS, and ROYAL	"	185,003	20	188,005	-	-	-	-	-	-	-	-	-	-
5	2	NAVAL RESERVE - - - - -	"	107,262	23	107,324	-	-	-	-	-	-	-	-	-	-
6	2	SCIENTIFIC BRANCH - - - - -	18	107,262	23	107,324	-	-	-	-	-	-	-	-	-	-
7	2	DOCKYARDS and NAVAL YARDS at HOME and ABROAD - - - - -	20	1,356,369	30	1,322,060	6	1,356,369	-	-	1,326,649	-	-	-	-	-
						† 4,580										
8	2	VICTUALLING YARDS at HOME and ABROAD - - - - -	24	74,339	62	75,548	-	-	-	-	-	-	7	-	74,339	75,548
9	2	MEDICAL ESTABLISHMENTS at HOME and ABROAD - - - - -	28	65,194	78	64,644	-	-	-	-	-	-	-	-	-	-
10	2	MARINE DIVISIONS - - - - -	"	18,204	94	18,868	-	-	-	-	-	-	-	-	-	-
		NAVAL STORES for the Building, Repair, and Outfit of the Fleet and Coast														
		Guard, Steam Machinery, and Ships built by Contract:														
Sec. I.	2	Section I. Naval Stores - - - - -	30	1,270,048	100	1,261,000	10	1,270,048	-	-	1,285,770	-	-	-	-	-
						† 24,770										
Sec. II.	2	Section II. Steam Machinery and Ships built by Contract - - - - -	32	913,675	100	902,608	Sec. II.	-	-	913,675	-	903,608	-	-	-	-
						† 1,000										
11	2	NEW WORKS, Buildings, Machinery, and Repairs - - - - -	52	625,087	-	644,751	11	-	-	511,004	-	541,005	11	-	9,124	11,296
						644,751										
12	2	MEDICINES and Medical Stores - - - - -	64	74,750	116	73,330	-	-	-	-	-	-	-	-	-	-
						† 200										
						* 4										
13	2	MARTIAL LAW and LAW CHARGES - - - - -	"	15,916	118	15,004	-	-	-	-	-	-	-	-	-	-
14	2	MISCELLANEOUS SERVICES - - - - -	68	203,530	120	148,823	-	-	-	-	-	-	-	-	-	-
						† 7,000										
		TOTAL for EFFECTIVE SERVICE - - - - -	2	8,850,493	-	8,707,283	-	-	-	4,051,006	-	4,057,032	-	-	1,127,040	1,094,803
						* 283										* 206
NAVY NON-EFFECTIVE SERVICES:																
15	2	HALF PAY, Reserved Half Pay, and Retired Pay to Officers of the Navy	70	881,171	124	888,211	-	-	-	-	-	-	-	-	-	-
		and Royal Marines - - - - -				† 1,300										
16	2	MILITARY and CIVIL PENSIONS and ALLOWANCES:	"	703,855	125	681,761	-	-	-	-	-	-	-	-	-	-
Sec. I.	2	Section I. Military Pensions and Allowances - - - - -	"	703,855	125	681,761	-	-	-	-	-	-	-	-	-	-
Sec. II.	2	Section II. Civil Pensions and Allowances - - - - -	72	284,424	"	284,520	16	-	-	163,641	-	150,252	16	-	9,784	11,473
							Sec. II.	-	-	4,214,737	-	4,216,284	Sec. II.	-	1,136,833	1,106,278
		TOTAL FOR THE NAVAL SERVICE - - - - -	2	10,719,913	-	10,653,104	-	-	-	-	-	-	-	-	-	-
						* 283										* 206
17	2	FOR THE SERVICE OF OTHER DEPARTMENTS OF GOVERNMENT:					-	-	-	-	-	-	-	-	-	-
		ARMY DEPARTMENT (Conveyance of Troops) - - - - -	76	181,300	136	172,000	-	-	-	-	-	-	-	-	-	-
						* 2,935										
		GRAND TOTAL - - - - -	2	10,901,243	-	10,825,194	-	-	-	4,214,737	-	4,216,284	-	-	1,136,833	1,106,484
						* 3,218										
	2	Amount written off as Irrecoverable - - - - -	76	2,680	-	-	-	-	-	-	-	-	-	-	-	-
			2	10,903,923	-	10,828,412	-	-	-	4,214,737	-	4,216,284	-	-	-	-
Division 1. NAVAL YARDS - - - - -																
		" 2. VICTUALLING - - - - -	-	-	-	-	-	-	-	4,214,737	-	4,216,284	-	-	-	-
		" 3. MEDICAL - - - - -	-	-	-	-	-	-	-	1,136,833	-	1,106,484	-	-	-	-
		" 4. MARINE - - - - -	-	-	-	-	-	-	-	159,737	-	155,955	-	-	-	-
		" 5. COAST GUARD - - - - -	-	-	-	-	-	-	-	597,674	-	598,286	-	-	-	-
		" 6. TRANSPORT - - - - -	-	-	-	-	-	-	-	509,349	-	452,698	-	-	-	-
		" 7. FLEET - - - - -	-	-	-	-	-	-	-	221,873	-	223,531	-	-	-	-
		" 8. CONTROL, &c. - - - - -	-	-	-	-	-	-	-	3,712,885	-	3,728,387	-	-	-	-
			-	-	-	-	-	-	-	348,155	-	346,837	-	-	-	-
		Divns. 1 to 8. TOTAL - - - - -	2	10,901,243	-	10,828,412	-	-	-	-	-	-	-	-	-	-
		Amount written off as Irrecoverable - - - - -	76	2,680	-	-	-	-	-	-	-	-	-	-	-	-
		GRAND TOTAL - - - - -	2	10,903,923	-	10,828,412	-	-	-	-	-	-	-	-	-	-

\* Vote of Credit for the Ashantee Expedition.

† Supplemental Information available at [www.jco.org](http://www.jco.org).

## RETABULATION of the STATEMENT of SURPLUSES and DEFICITS.

DIVISION 4, MARINE.				DIVISION 5, COAST GUARD.				DIVISION 6, TRANSPORT.				DIVISION 7, FLEET.				DIVISION 8, CONTROL, &c.				DIVISIONS 1 to 8, TOTALS.				Number of Vote.
For Details, see Pages 38 and 42.				For Details, see Pages 46 and 50.																				
Expenditure, 1875-76.	Page in Estimates.	Grant, 1875-76.	No. of Vote.	Expenditure, 1875-76.	Page in Estimates.	Grant, 1875-76.		Expenditure, 1875-76.	Page in Estimates.	Grant, 1875-76.		Expenditure, 1875-76.	Page in Estimates.	Grant, 1875-76.		Expenditure, 1875-76.	Page in Estimates.	Grant, 1875-76.		Expenditure, including Expenditure on Account of the Ashantee Expedition, 1875-76.	Page in Estimates.	Grant, and Amounts Appropriated out of the Total of Credit Votes, Ashantee Expedition, 1875-76.		
£.		£.		£.		£.		£.		£.		£.		£.		£.		£.		£.		£.		
261,518	-	259,166	1	375,310	-	326,325		40,517	-	48,431		1,028,707	-	2,006,638 * 73		3,880	-	4,102		2,009,930	-	2,044,062 * 71		1
99,291	-	99,820	-	-	-	-		-	-	-		-	-	-		-	-	-		1,142,877	-	1,107,781 * 206		2
-	-	-	-	-	-	-		-	-	-		-	-	-		3	-	187,809	-	187,809	-	183,016		3
-	-	-	4	47,793	-	47,475		-	-	-		4	-	133,876	-	3,934	-	4,330		185,603	-	188,505		4
-	-	-	-	-	-	-		-	-	-		5	-	23,820	-	81,338	-	78,224		107,292	-	107,324		5
-	-	-	-	-	-	-		-	-	-		-	-	-		-	-	-		1,350,309	-	1,326,640		6
-	-	-	-	-	-	-		-	-	-		-	-	-		-	-	-		74,330	-	75,548		7
-	-	-	-	-	-	-		-	-	-		-	-	-		-	-	-		63,104	-	64,644		8
18,204	-	18,868	-	-	-	-		-	-	-		-	-	-		-	-	-		18,204	-	18,868		9
-	-	-	-	-	-	-		-	-	-		-	-	-		-	-	-		10	-	1,270,048		10
-	-	-	-	-	-	-		-	-	-		-	-	-		-	-	-		Sec. I.	-	1,285,770		Sec. I.
19,175	-	17,707	11	31,198	-	23,599		-	-	-		11	-	26,064	-	10,303	-	10,585		913,675	-	903,608		Sec. II.
-	-	-	-	-	-	-		-	-	-		-	-	-		-	-	-		625,087	-	644,751		11
-	-	-	-	-	-	-		-	-	-		-	-	-		-	-	-		74,750	-	73,530 * 4		12
-	-	-	-	-	-	-		-	-	-		13	-	8,250	-	7,506	-	8,538		15,816	-	15,904		13
-	-	-	-	-	-	-		-	-	-		14	-	203,530	-	150,423	-	-		203,530	-	156,423		14
398,186	-	393,561	-	454,301	-	390,399		40,517	-	48,431		-	-	2,327,147	-	2,359,340 * 73	-	294,020		8,850,493	-	8,707,283 * 289		
67,494	-	73,100	-	-	-	-		-	-	-		15	-	813,737	-	816,411	-	-		831,171	-	880,511		15
131,730	-	129,139	16	-	-	-		-	-	-		16	-	571,860	-	552,357	-	-		703,855	-	681,781		16
324	466	-	Sec. II.	55,048	-	53,299		56	-	75		Sec. I.	-	141	-	160	-	63,235		281,124	-	284,329		Sec. II.
597,764	-	598,286	-	509,349	-	452,698		40,573	-	48,506		-	-	3,712,885	-	3,728,264 * 73	-	348,155		10,719,943	-	10,653,104 * 283		
-	-	-	-	-	-	-		181,300	-	172,090 * 2,035		-	-	-	-	-	-	-		181,300	-	172,090 * 2,035		17
597,674	-	598,286	-	509,349	-	452,698		221,873	-	220,596 * 2,035		-	-	3,712,885	-	3,728,337	-	348,155		10,901,243	-	10,828,412		
597,574	-	598,286	-	509,349	-	452,698		221,873	-	220,596		-	-	3,712,885	-	3,728,337	-	348,155		10,901,243	-	10,828,412		
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DIVISION 1.

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NAVAL YARDS.

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## RETABULATION of the SURPLUSES AND DEFICITS DIVISION 1. NAVAL YARDS (for DETAILS, see pages 18 and 19.)

## DIVISION 1.—NAVAL YARDS.

## SUB-DIVISIONS OF DIVISION 1.

number of Vote.	Page in this Account.	TITLE OF VOTE.	DIVISION 1.		DEPTFORD.		CHATHAM.		SHEERNESS.		PORTSMOUTH.							
			Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.						
			£.	£.	£.	£.	£.	£.	£.	£.	£.	£.						
6	10	DOCKYARDS and NAVAL YARDS at HOME and ABROAD	20	1,856,369	-	*1,326,640	7,424	210	7,114	256,285	210	250,598	137,206	210	137,234	389,958	-	*379,9
10	10	NAVAL STORES for the Building, Repair, and Outfit of the Fleet and Coast Guard, Steam Machinery, and Ships built by Contract:																
et. I.		Section I. Naval Stores - - - - -	30	1,270,048	-	*1,285,770	76,673	"	140,900	259,252	"	253,200	65,205	"	72,850	315,839	-	*376,0
et. II.		Section II. Steam Machinery and Ships built by Contract - - - - -	32	913,675	-	*903,608	-	-	-	110,937	"	108,130	10,384	"	13,335	93,427	210	72,2
11	10	NEW WORKS, Building, Machinery, and Repairs - - -	-	511,004	211	541,005	-	-	-	97,028	"	98,410	17,353	"	19,320	226,338	"	237,0
16 et. II.		TOTAL FOR EFFECTIVE SERVICE - - - £.	-	4,051,096	-	*4,057,032	84,097	210	148,014	723,502	210	710,338	230,148	"	242,739	1,025,662	-	*1,065,2
	10	CIVIL PENSIONS and ALLOWANCES - - - - -	-	163,641	211	159,252	-	-	-	-	-	-	-	-	-	-	-	-
		GRAND TOTAL (DIVISION 1.) } NAVAL YARDS	£.	4,214,737	-	*4,216,284	84,097	210	148,014	723,502	210	710,338	230,148	210	242,739	1,025,662	-	*1,065,2
		DEPTFORD - - - - -	-	-	-	-	84,097	"	148,014	-	-	-	-	-	-	-	-	-
		CHATHAM - - - - -	-	-	-	-	723,502	"	710,338	-	-	-	-	-	-	-	-	-
		SHEERNESS - - - - -	-	-	-	-	230,148	"	242,739	-	-	-	230,148	"	242,739	-	-	-
		PORTSMOUTH - - - - -	-	-	-	-	1,025,662	-	*1,065,271	-	-	-	-	-	-	1,025,662	-	*1,065,2
		DEVONPORT AND KEYHAM - - - - -	-	-	-	-	620,937	210	639,316	-	-	-	-	-	-	-	-	-
		PEMBROKE - - - - -	-	-	-	-	237,024	"	275,780	-	-	-	-	-	-	-	-	-
		HAULBOWLINE - - - - -	-	-	-	-	29,856	"	39,693	-	-	-	-	-	-	-	-	-
		YARDS ABROAD - - - - -	-	-	-	-	308,587	"	219,723	-	-	-	-	-	-	-	-	-
		OTHER THAN YARDS - - - - -	-	-	-	-	957,024	-	*875,410	-	-	-	-	-	-	-	-	-
		TOTAL DIVISION 1 } (NAVAL YARDS)	£.	4,214,737	-	*4,216,284	-	-	-	-	-	-	-	-	-	-	-	-

\* Including Supplementary Estimates.







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**DIVISION 1.**

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**NAVAL YARDS.**

(DETAILS OF PAGES 14 AND 15.)

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## RETABULATION of the SURPLUSES AND DEFICITS DIVISION 1.—NAVAL YARDS. —(DETAILS of Pages 14 and 15.)

Number of Vote.		Sub-Heads. Reference Tables.		TITLE OF SUB-HEAD OF VOTE		DEPTFORD.		CHATHAM.		SHEERNES.		PORTSMOUTH.		DEVONPORT AND KEYHAM.		
						Expenditure. Grant.		Expenditure. Grant.		Expenditure. Grant.		Expenditure. Grant.		Expenditure.		
						£. 210	£.	£. 210	£.	£. 210	£.	£. 210	£. 210	£.	£.	
6.			Vote 6.—DOCKYARDS AND NAVAL YARDS AT HOME AND ABROAD.				1,525 210 1,524	20,046 210 20,140	16,164 210 16,545	26,234 210	only the Total Sum Surpluses and Deficits	26,234 210	only the Total Sum Surpluses and Deficits	26,234 210	only the Total Sum Surpluses and Deficits	
	A.	K.	SALARIES AND ALLOWANCES					22 " 17	28 " 1	2,387 5	Portsmouth	805 " 90	2,387 5	Portsmouth	805 " 90	
	B.	L.	RENTS, RATES, TAXES, and WATER					1,156 " 1,200	1,040 " 1,000	2,452 " 2,350	Portsmouth	1,060 " 1,040	2,452 " 2,350	1,060 " 1,040	2,452 " 2,350	
	C.	M.	LIGHTING WITH GAS				53 210 64	711 " 782	535 " 587	1,229 185	Portsmouth	996 " 851	1,229 185	996 " 851	1,229 185	
	D.	N.	CONTINGENCIES													
	E.	O.	WAGES, Unskilled, Black, and Steam Factory (excluding Vote 11)				5,002 " 5,188	22,110 " 22,770	1,040 " 1,000							
	F.	P.	WAGES, Yard Staff, Mill, &c.				75 " 72	3,141 " 3,007	3,000 " 5,774							
	G.	Q.	HIRE OF TEAMS					1,073 " 1,374	1,297 " 1,272							
	H.	R.	WAGES, &c., Police Force				265 210 260	7,500 " 7,995	2,774 " 2,796	8,001 " 8,046	Portsmouth	7,945 " 60	8,001 " 8,046	7,945 " 60	8,001 " 8,046	
	J.	S.	EXTRA PAY TO ARTIFICERS of the Fleet					37 " 20	1 " -	27 " -	Portsmouth					
				Total Vote 6		7,124 210 7,114	256,285 210 250,768	147,206 210 137,234	389,958 - *379,953		325,670					
				Vote 10, Sect. 1.—NAVAL STORES.												
10. Sec. I.	A.	-	TIMBER, Masts, Deals, &c.				4,504 210 4,100	13,342 210 24,000	7,000 " 2,000							
	B.	-	METALS, &c., Masts, Arrows, &c., BURNING IRON, ARMOUR PLATE, IRON BEAMS, and IRON MASTS				10,142 " 10,000	1,500 " 1,000	3,000 " 2,400							
	C.	-	COALS and other Fuel, &c.				10 " -	1,000 " 1,000	1,000 " 1,000							
	D.	-	HAIR, Canvas, &c.				24,500 " 10,500	42,204 " 40,000	4,500 " 0,000	6,007 " 12,003		65,050				
	E.	-	PAINTS, VARNISHES, OILS, FLOUR, TAR, &c., and other Miscellaneous Articles				32,001 " 29,500	27,318 " 22,500	10,019 " 11,000	60,213 " *57,170		48,766				
	F.	-	EXPLOSIVE AND OTHER MATERIALS FOR USE OF THE NAVAL STORES				1,000 " 9,000	617 " 100	160 " 150	60 210 300		678				
	G.	-	PERMANENTLY OBTAINABLE STORES FOR THE NAVAL STORES													
					Total Vote 10, Sect. 1		76,754 210 110,000	256,282 210 250,768	72,800 210 72,800	31,000 210 30,000		24,000				
					Vote 10, Sect. 2.—STEAM MACHINERY AND SHIPS BUILT BY CONTRACT.											
	10. Sec. II.	A.	-	STEAM MACHINERY for Her Majesty's Ships and Vessels					101,250 " 92,460	9,800 210 11,000						
B.		-	SHIPS, &c., building by Contract													
C.		-	STEAM BOATS to be Ordered													
D.		-	EXPERIMENTAL PURPOSES, SPECIALS, and CONTINGENCIES													
E.		-	REPAIRS (SHIPS BUILT BY CONTRACT) Masts, &c., Dockyards													
F.		-	SALARIES, SUPERINTENDENT, ASSISTANT, &c., Dockyards													
G.		-	CONTRACT and other Works													
H.		-	FOR SPECIAL CASES, CARRIAGES, &c.													
				Total Vote 10, Sect. 2			110,937 210 108,130	10,384 210 13,335	93,427 210 72,240		11,744					
				Vote No. 11.—NEW WORKS, REPAIRS, &c. (NAVAL YARDS ONLY.)												
11.			LAND, Buildings, &c.													
			Buildings, No. 1													
			Buildings, No. 2													
			Buildings, No. 3													
			Buildings, No. 4													
			Buildings, No. 5													
			Buildings, No. 6													
			Buildings, No. 7													
			Buildings, No. 8													
					MACHINERY, Additions, Repairs											
				TOTAL VOTE 11, According with Surpluses and Deficits, pages 43 to 54												
				CONTINGENCIES (Works and Repairs)												
				Machinery												
				TEMPORARY SUPERINTENDENCE OF ENGINEERING AND ARCHITECTURAL WORKS AND DRAWINGS												
				Total Vote 11, Naval Yards only												
				Total Votes, Nos. 6, 10, and 11												
				VOTE 16, SECT. 2.—CIVIL PENSIONS AND ALLOWANCES												
				TOTAL DIVISION 1. NAVAL YARDS												
16. Sec. II.																

A.—Included under Deptford Store Yard and Sub-head G.

\* Including Supplementary Estimates.

RETABULATION of the SURVIVORS AND DEATHS - **DIVISION 1.-NAVAL YARDS.** (Details of Pages 14 and 15.)





DIVISION 2.

V I C T U A L L I N G.

## RETABULATION of the SURPLUSES AND DEFICITS.—DIVISION 2. VICTUALLING. (continued from page 20.)

DIVISION 2.—VICTUALLING.					SUB-DIVISIONS OF DIVISION 2.									
Number of Vote.	Page in his Account.	TITLE OF VOTE.	DIVISION 2.		DEPTFORD.		GOSPORT.		PLYMOUTH.		HAULBOWLINE.			
			Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.		
2	10	VICTUALS AND CLOTHING FOR SEAMEN AND MARINES.	£. 1,043,586	£. 1,007,961	£. 453,277	£. 441,493	£. 78,259	£. 99,059	£. 71,592	£. 78,188	£. 12,831	£. 214		
7	10	VICTUALLING YARDS AT HOME AND ABROAD.	£. 74,339	£. 75,548	£. 33,371	£. 34,435	£. 12,731	£. 13,053	£. 12,709	£. 12,569	£. 2	£. 214		
11	10	NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS.	£. 9,124	£. 11,296	£. 3,389	£. 4,009	£. 2,347	£. 2,922	£. 2,268	£. 2,1	£. 15,332	£. 15,332		
		TOTAL, EFFECTIVE SERVICE - - -	£. 1,127,049	£. 1,094,805	£. 490,037	£. 479,937	£. 93,337	£. 115,034	£. 86,569	£. 92,802	£. 15,332	£. 15,332		
16, Sect. II.	10	CIVIL PENSIONS AND ALLOWANCES -	£. 9,784	£. 11,473	£. -	£. -	£. -	£. -	£. -	£. -	£. -	£. -		
		GRAND TOTAL (DIVISION 2.)	£. 1,136,833	£. 1,106,278	£. 490,037	£. 479,937	£. 93,337	£. 115,034	£. 86,569	£. 92,802	£. 15,332	£. 15,332		
		DEPTFORD - - - - -			£. 490,037	£. 479,937								
		GOSPORT - - - - -			£. 93,337	£. 115,034								
		PLYMOUTH - - - - -			£. 86,569	£. 92,862								
		HAULBOWLINE - - - - -			£. 15,332	£. 25,004								
		YARDS ABROAD - - - - -			£. 118,487	£. 135,290								
		OTHER THAN YARDS - - - - -			£. 648,100	£. 603,912								
		GROSS TOTAL - - - - -			£. 1,451,862	£. 1,452,039								
		REPAYMENTS - - - - -			£. 565,029	£. 214								
		NET TOTAL (Division 2.)	£. 1,136,833	£. 1,106,278										

## RETABULATION of the SURPLUSES AND DEFICITS.—DIVISION 2.—VICTUALLING (For DETAILS, see pages 26 and 27).

## SUB-DIVISIONS OF DIVISION 2.

TOTAL HOME YARDS.			YARDS ABROAD.			OTHER THAN YARDS. (Direct Purchases by Ships, Allowances, Freight, &c.)			GROSS TOTAL.			REPAYMENTS. (Supplies to other Departments, Issues to Seamen, &c., to be Paid for.)			TOTAL, DIVISION 2. VICTUALLING.			Number of Vote.	
Grant.			Expenditure.		Grant.	Expenditure.		Grant.	Expenditure.		Grant.	Actual Credit.		Estimated Credit.		Expenditure.			Grant.
£.	Page in Estimate.	Page in Statement of Return.	£.	Page in Estimate.	£.	£.	Page in Estimate.	£.	£.	Page in Estimate.	£.	£.	Page in Estimate.	£.	£.	£.	Page in Estimate.		£.
61,000	215	641,168	104,340	215	120,115	638,316	-	592,439	1,358,615	-	1,353,722	Cr. 315,029	-	Cr. 345,761	-	1,043,586	-	1,007,961	2
61,312	"	62,633	13,027	"	12,915	-	-	-	74,339	215	75,548	-	-	-	-	74,339	215	75,548	7
8 14	"	9,000	1,120	"	2,200	-	-	-	9,124	"	11,296	-	-	-	-	9,124	"	11,296	11
684,275	-	712,837	118,487	-	135,290	638,316	-	592,439	1,442,078	-	1,440,566	Cr. 315,029	-	Cr. 345,761	-	1,127,049	-	1,094,805	
-	-	-	-	-	-	9,784	215	11,473	9,784	215	11,473	-	-	-	-	9,784	215	11,473	16, Sect. II.
684,275	215	712,837	118,487	215	135,290	648,100	-	603,912	1,451,862	-	1,452,039	Cr. 315,029	-	Cr. 345,761	-	1,136,833	-	1,106,278	
118,487	215	135,290	648,100	-	603,912	1,451,862	-	1,452,039	Cr. 315,029	-	Cr. 345,761	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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**DIVISION 2.**

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**V I C T U A L L I N G**

(DETAILS OF PAGES 22 and 23.)

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## RETABULATION of the SURPLUSES AND DEFICITS. DIVISION 2.—VICTUALLING (Details of Part 2)

<

## RETABULATION OF STAPLES AND DEBITES.—DIVISION 2.—VICTUALLING—(DETAILS of Pages 22 and 23).

## SUB-DIVISIONS OF DIVISION 2.

HOME YARDS.		YARDS ABROAD.		OTHER THAN YARDS (Direct Purchases by Ships, Allowances, Freight, &c.).		GROSS TOTAL.		REPAYMENTS (Supplies to other Departments, Issue to Seamen, &c., to be paid for.)		NET TOTAL.		Sub-Heads Reference Letter.	Number of Vote.
Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Actual Credit.	Estimated Credit.	Expenditure.	Grant.		
£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.		
391	219	341,323	92,900	219	103,928	214,251	202,312	610,532	617,503	551,893	538,209	A.	
—	—	—	—	—	—	149,685	141,500	149,685	141,500	149,682	141,500	B.	
—	—	—	—	—	—	195,383	188,816	195,383	188,816	195,368	188,816	C.	
32,451	219	37,778	71	219	4	4,014	1,704	36,606	39,486	33,108	36,000	D.	
—	—	—	—	—	—	12,013	13,000	12,013	13,000	12,013	13,000	E.	
11,282	219	7,847	81	219	280	5,901	7,873	17,264	16,000	17,033	16,000	F.	2
11,205	—	72,184	3,005	—	4,682	1,588	782	49,798	77,648	28,133	37,000	G.	
681	—	1,169	6,049	—	9,377	5,324	2,670	12,057	13,216	11,919	13,000	H.	
105,732	—	180,867	1,071	—	1,844	49,152	33,782	240,277	216,463	248,090	216,463	I.	
174	—	—	1,173	—	—	975	—	—	—	—	—	O.	
—	—	—	—	—	—	—	—	—	—	—	—		
17,977	—	—	—	—	—	—	—	—	—	—	—		
14,004	219	14,653	5,926	219	5,729	—	—	20,530	20,382	20,582	20,582	A.	
621	219	508	437	219	50	—	—	1,058	618	1,058	618	B.	
784	219	1,070	92	219	115	—	—	876	1,185	876	1,185	C.	
601	219	511	263	219	219	—	—	964	730	861	730	D.	
33,327	219	34,534	6,255	219	6,652	—	—	30,652	41,186	30,652	41,186	E.	
6,296	219	6,312	—	—	—	—	—	6,296	6,312	6,296	6,312	F.	
4,917	219	4,985	—	—	—	—	—	4,917	4,985	4,917	4,985	G.	
2	—	—	114	219	150	—	—	116	150	116	150	N.	
31	—	—	13,027	—	12,915	—	—	74,339	75,548	74,339	75,548		
—	—	—	271	219	2,260	—	—	1,857	7,780	1,857	7,780	I.	
—	—	—	810	—	—	—	—	4,274	—	4,274	—	Q.	
—	—	—	—	—	—	—	—	140	2,518	146	2,518		
—	—	—	1,120	219	2,260	—	—	8,521	10,296	8,521	10,296		
—	—	—	—	—	—	—	—	27	1,000	27	1,000	S.	
—	—	—	—	—	—	—	—	166	—	166	—	T.	
—	—	—	1,120	219	2,260	—	—	9,124	11,296	9,124	11,296		
775	—	712,837	118,487	—	135,290	638,316	592,439	1,358,615	1,353,722	1,127,049	1,094,805		
—	—	—	—	—	—	9,781	11,473	9,784	11,473	9,784	11,473		
587,275	—	712,837	118,487	—	135,290	648,109	603,912	1,451,862	1,452,039	1,136,833	1,106,278		

Amounts for Penances are shown in the column for "Other than Yards," as the principle adopted in this Return is to apportion Penances to the specific Divisions 1 to 8 only, it being considered undesirable to go into greater detail than this.

In this sheet the Total Amount only for Division 2, "Victualling," is given.

Estimated Credits to these Sub-Heads are included in the Credit of 192,117 £. against Sub-Head O.





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**DIVISION 3.**

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**M E D I C A L.**

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### DIVISION 3. MEDICAL.

## SUB-DIVISION OF DIVISION 3.

Number of Vote.		TITLE OF VOTE.	DIVISION 3. MEDICAL.		DEPTFORD (Medical Store Depot).		HASLAR.		PLYMOUTH.		HAULBOWLINE.		YARMOUTH.		PORTLAND.		CHATHAM.		DEAL.	
			Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.
			£.	Page in Estimate.	£.	Page in Estimate.	£.	Page in Estimate.	£.	Page in Estimate.	£.	Page in Estimate.	£.	Page in Estimate.	£.	Page in Estimate.	£.	Page in Estimate.	£.	Page in Estimate.
5	10	SCIENTIFIC BRANCH	16	104	23	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	10	MEDICAL ESTABLISHMENTS AT HOME AND ABROAD	28	65,194	93	64,644	-	-	-	-	15,420	15,325	12,051	11,773	1,630	-	1,744	-	-	-
11	10	NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS	-	17,229	-	14,740	-	-	-	-	4,145	4,035	1,742	1,598	-	-	2,307	-	-	-
12	10	MEDICINES AND MEDICAL STORES, &c.	64	71,750	116	73,530	12,291	12,113	8,789	8,804	7,487	7,170	665	652	1,070	4,140	345	329	2,733	633
		TOTAL FOR EFFECTIVE SERVICE	-	157,277	-	153,914	12,291	12,113	28,428	28,235	21,310	21,270	2,295	2,396	8,334	8,141	1,118	971	9,383	2,242
16. Sect. I.	10	MILITARY PENSIONS AND ALLOWANCES	-	265	125	265	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sect. II.	10	CIVIL PENSIONS AND ALLOWANCES	-	2,145	-	2,672	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		GRAND TOTAL (DIVISION 3.) MEDICAL	-	159,757	-	155,951	12,291	12,113	28,428	28,235	21,310	21,270	2,295	2,396	8,334	8,141	1,118	971	9,383	2,242
		DEPTFORD Medical Store Depot	-	-	-	-	12,291	12,113	-	-	-	-	-	-	-	-	-	-	-	-
		HASLAR	-	-	-	-	28,428	28,235	28,428	28,235	-	-	-	-	-	-	-	-	-	-
		PLYMOUTH	-	-	-	-	21,310	21,270	-	-	21,310	21,270	-	-	-	-	-	-	-	-
		MEDICAL ESTABLISHMENTS	-	-	-	-	2,295	2,396	-	-	-	-	2,295	2,396	-	-	-	-	-	-
		HAULBOWLINE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		YARMOUTH	-	-	-	-	8,334	8,141	-	-	-	-	-	-	8,334	8,141	-	-	-	-
		PORTLAND	-	-	-	-	1,118	971	-	-	-	-	-	-	-	-	1,118	971	-	-
		CHATHAM	-	-	-	-	9,383	9,710	-	-	-	-	-	-	-	-	-	-	9,383	9,710
		DEAL	-	-	-	-	2,242	2,149	-	-	-	-	-	-	-	-	-	-	-	2,242
		MARINE INFIRMARIES	-	-	-	-	37,399	37,002	-	-	-	-	-	-	-	-	-	-	-	-
		PORTSMOUTH (Marine Infirmary, Forton)	-	-	-	-	886	967	-	-	-	-	-	-	-	-	-	-	-	-
		PORTSMOUTH (Marine Artillery Infirmary, Fort Cumberland)	-	-	-	-	1,187	1,369	-	-	-	-	-	-	-	-	-	-	-	-
		PLYMOUTH	-	-	-	-	41	44	-	-	-	-	-	-	-	-	-	-	-	-
		LEWES NAVAL PRISON Dispensary	-	-	-	-	1,316	1,314	-	-	-	-	-	-	-	-	-	-	-	-
		OTHER MEDICAL ESTABLISHMENTS, &c., AT HOME	-	-	-	-	33,919	30,612	-	-	-	-	-	-	-	-	-	-	-	-
		MEDICAL ESTABLISHMENTS ABROAD	-	-	-	-	37,399	37,002	-	-	-	-	-	-	-	-	-	-	-	-
		OTHER THAN ESTABLISHMENTS, &c.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		TOTAL Division 3 (Medical)	-	159,757	-	155,951	-	-	-	-	-	-	-	-	-	-	-	-	-	-

RETABULATION of the SURPLUSES AND DEFICITS. **DIVISION 3. MEDICAL** (for Details, see pages 34 and 35).

## SUB-DIVISION OF DIVISION 3.

PORTSMOUTH (Marine Artillery Infirmary, Forton).		PORTSMOUTH (Marine Artillery Infirmary, Fort Cumberland).		PLYMOUTH.		LEWES NAVAL PRISON Dispensary.		OTHER MEDICAL ESTABLISHMENTS &c., AT HOME.		TOTAL MEDICAL ESTABLISHMENTS, &c., AT HOME.		MEDICAL ESTABLISHMENTS ABROAD.		TOTAL MEDICAL ESTABLISHMENTS, &c. at HOME and ABROAD.		OTHER THAN ESTABLISHMENTS, &c.		TOTAL DIVISION 3. MEDICAL.		
Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	
£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	
1,148	1,558	1,606	1,187	1,369	41	44	1,025	1,014	46,093	45,478	19,101	19,166	65,194	64,644	16	104	23	100	5	100
Cr. 342	Cr. 672	Cr. 679	1,187	1,369	41	44	184	207	10,294	10,859	6,935	3,881	17,229	14,740	34,950	34,065	61	71,750	11	11,740
342	886	967	1,187	1,369	41	44	1,316	1,314	88,419	88,337	33,919	30,612	122,338	118,949	37,399	37,002	70	159,787	12	15,740
Cr. 342	886	967	1,187	1,369	41	44	1,316	1,314	88,419	88,337	33,919	30,612	122,338	118,949	37,399	37,002	159,787	158,994	16.	158,994
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This Statement is prepared, strictly speaking, as a Retabulation of the Appropriation Account (part of Parliamentary Paper, No. 36, of Session 1877), which only shows the total of each Vote. The Statement of Surpluses and Deficits (also part of Parliamentary Paper, No. 30, of Session 1877) is in fact the same as the Appropriation Account except that in the former Account the amounts of the Sub-heads of each Vote are given. The Retabulation, pages 34 and 35, showing details as per Sub-heads, is therefore given as a Retabulation of the Statement of the Surpluses and Deficits.





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**DIVISION 3.**

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**M E D I C A L.**

(DETAILS OF PAGES 30 and 31.)

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## RETABULATION of the SURPLUSES AND DEFICITS—DIVISION 3.—MEDICAL.—(DETAILS of Pages 30 and 31.)

## RETABULATION of the SURPLUSES AND DEFICITS. DIVISION 3. MEDICAL.—(DETAILS of Pages 30 and 31.)





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**DIVISION 4.**

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**M A R I N E.**

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# RETABULATION of the SURPLUSES AND DEFICITS - DIVISION 4. MARINE

Number of Vote.	Page in this Account.	TITLE OF VOTE.	DIVISION 4. MARINE.		CHATHAM.		PORTSMOUTH MARINE BARRACKS, FORTON.		PORTSMOUTH MARINE ARTILLERY BARRACKS	
			Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.
			£.	£.	£.	£.	£.	£.	£.	£.
1	11	WAGES, &c. TO SEAMEN AND MARINES -	262,422	260,300	46,993	46,840	46,128	45,969	68,805	68,805
2	11	VICTUALS AND CLOTHING FOR SEAMEN AND MARINES -	99,292	99,820	20,507	20,620	17,933	17,967	25,100	25,100
9	11	MARINE DIVISIONS -	18,204	18,868	2,962	3,148	4,117	4,005	4,461	4,461
11	11	NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS -	19,175	17,707	2,681	2,501	4,662	4,515	3,588	3,588
		TOTAL FOR EFFECTIVE SERVICE -	399,093	396,695	73,143	73,109	72,840	72,456	101,954	101,954
15	11	HALF PAY, RESERVED HALF PAY, AND RETIRED PAY -	67,434	73,100	-	-	-	-	-	-
16, Sect. I.	11	SECT. I.—MILITARY PENSIONS AND ALLOWANCES -	131,730	129,159	-	-	-	-	-	-
Sect. II.	11	SECT. II.—CIVIL PENSIONS AND ALLOWANCES -	324	466	-	-	-	-	-	-
		GRAND TOTAL (DIVISION 4) MARINE -	598,581	599,420	73,143	73,109	72,840	72,456	101,954	101,954
		CHATHAM -			73,143	73,109				
		PORTSMOUTH MARINE BARRACKS, FORTON -			72,840	72,456	72,840	72,456		
		PORTSMOUTH MARINE ARTILLERY BARRACKS -			101,954	101,875	-	-	101,954	101,875
		PLYMOUTH -			74,831	73,073	-	-	-	-
		WALMER RECRUITING DEPÔT -			57,554	57,218	-	-	-	-
		TOTAL MARINE DIVISIONS -			380,322	377,731	-	-	-	-
		OTHER THAN DIVISIONS -			217,353	220,555	-	-	-	-
		TOTAL DIVISION 4 (MARINE) -			597,675	598,286	-	-	-	-

## RETABULATION of the SURPLUSES AND DEFICITS.—DIVISION 4. MARINE (for DETAILS, see pages 42 and 43).

PLYMOUTH.		WALMER RECRUITING DEPÔT.		TOTAL MARINE DIVISIONS.		OTHER THAN DIVISIONS.		TOTAL DIVISION 4. MARINE.		Number of Vote.
Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	
£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	
48,183	33,006	32,384	243,315	241,172	18,201	17,694	261,516	259,166		1
17,579	18,315	18,171	99,645	99,714	Cr. 353	106	99,292	99,820		2
97 3,774	3,252	3,403	18,204	18,868	—	—	18,204	18,868		9
3,537	2,981	2,960	19,158	17,677	17	30	19,175	17,707		11
4,801 73,073	57,554	57,218	380,322	377,731	17,865	17,830	398,187	395,561		
—	—	—	—	—	67,434	73,100	67,434	73,100		15
—	—	—	—	—	131,730	129,159	131,730	129,159		16, Sect. I.
—	—	—	—	—	324	466	324	466		Sect. II.
4,801 73,073	57,554	57,218	380,322	377,731	217,353	220,555	597,675	598,286		
—	57,554	57,218	380,322	377,731	217,353	220,555	597,675	598,286		

Statement Paper No. 86, of Session 1877 is, in fact, the same as the Appropriation Account, except that in the former Account the amounts of the Sub-heads of each Vote are given. The Retabulation, pages 42 and 43, showing details as





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**DIVISION 4.**

**M A R I N E.**

DETAILS of PAGES 38 and 39.

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## RETABULATION of the SURPLUSES AND DEFICITS—DIVISION 4. MARINE.—(Details of pages 38 and 39)

Number of Vote.	Sub-Heads Reference Letter.		TITLE OF SUB-HEAD OF VOTE.	CHATHAM.		PORTSMOUTH MARINE BARRACKS, FORTON.		PORTSMOUTH MARINE ARTILLERY BARRACKS.	
	Home.	Abroad.		Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.
1			<b>Vote 1.—Wages, &amp;c. to Seamen and Marines— (Marine Divisions only):</b>	Page in Surpluses and Deficits.	Page in Estimates.	Page in Surpluses and Deficits.	Page in Estimates.	Page in Surpluses and Deficits.	Page in Estimates.
	C.	-	SUBSISTENCE OF COMMISSIONED AND STAFF OFFICERS, ROYAL MARINES, <i>on Shore.</i>	£. 11,376	£. 12,176	£. 10,403	£. 11,135	£. 13,001	£. 13,001
	D.	-	SUBSISTENCE OF NON-COMMISSIONED OFFICERS AND PRIVATES, ROYAL MARINES, <i>on Shore.</i>	32,322	31,074	31,834	30,604	51,020	51,020
	E.	-	PRIZES FOR GOOD SHOOTING - - - - -	145	182	110	149	176	176
	F.	-	RECRUITING EXPENSES, ROYAL MARINES - - - - -	—	—	—	—	—	—
	G.	-	COLONIAL PAY AND FIELD ALLOWANCES TO MARINES IN JAPAN - - - - -	—	—	—	—	—	—
	H.	-	CONTINGENCIES, MARINE SERVICE - - - - -	3,150	3,408	3,772	4,081	3,912	3,912
			<b>Total, Vote 1—(MARINE DIVISIONS ONLY) - - -</b>	<b>46,993</b>	<b>46,840</b>	<b>46,128</b>	<b>45,969</b>	<b>68,805</b>	<b>68,805</b>
2			<b>Vote 2.—Victuals and Clothing for Seamen and Marines— (Marine Divisions only):</b>	Page in Surpluses and Deficits.	Page in Estimates.	Page in Surpluses and Deficits.	Page in Estimates.	Page in Surpluses and Deficits.	Page in Estimates.
	K.	-	MARINE CLOTHING AND APPOINTMENTS - - - - -	12,035	11,866	11,354	11,195	15,445	15,445
	L.	-	ALLOWANCES IN LIEU OF MARINE CLOTHING, &c. - - - - -	1,142	1,068	980	925	591	591
	M.	-	MARINE BARRACK STORES - - - - -	3,422	3,771	1,824	2,011	3,465	3,465
	N.	-	BEER MONEY AND EXCESS COST OF RATIONS FOR ROYAL MARINES, <i>on Shore.</i>	5,200	4,750	5,303	4,788	7,150	7,150
	O.	-	Abate—Estimated Amount of Charges against Officers, Seamen, and Marines for Issues of Clothing, &c. (Marine Divisions only) /	21,859 1,352	21,404 87½	19,460 1,527	18,919 952	26,581 1,287	26,581 1,287
			<b>Total, Vote 2 (MARINE DIVISIONS ONLY) - - -</b>	<b>20,507</b>	<b>20,620</b>	<b>17,933</b>	<b>17,967</b>	<b>25,100</b>	<b>25,100</b>
9			<b>Vote 9.—Marine Divisions:</b>	Page in Surpluses and Deficits.	Page in Estimates.	Page in Surpluses and Deficits.	Page in Estimates.	Page in Surpluses and Deficits.	Page in Estimates.
	A.	-	SALARIES AND ALLOWANCES - - - - -	1,120	1,014	1,099	1,504	1,748	1,748
	B.	-	RENTS, RATES, TAXES, AND WATER - - - - -	597	765	995	1,082	770	770
	C.	-	LIGHTING THE BARRACKS WITH GAS - - - - -	734	800	635	690	1,450	1,450
	D.	-	CONTRIBUTIONS AND GRANTS IN AID - - - - -	147	160	166	169	114	114
	E.	-	CONTINGENCIES - - - - -	358	400	632	520	373	373
			<b>Total, Vote 9 - - -</b>	<b>2,962</b>	<b>3,149</b>	<b>4,117</b>	<b>4,005</b>	<b>4,461</b>	<b>4,461</b>
11			<b>Vote 11.—New Works, &amp;c.—(Marine Divisions only):</b>	Page in Surpluses and Deficits.	Page in Estimates.	Page in Surpluses and Deficits.	Page in Estimates.	Page in Surpluses and Deficits.	Page in Estimates.
	L.	-	BUILDINGS { ADDITIONS - - - - -	500	770	2,443	2,400	205	205
			{ REPAIRS, &c. - - - - -	2,072	1,000	2,018	1,800	1,372	1,372
	L.	-	MACHINERY { ADDITIONS - - - - -	—	—	130	130	—	—
			{ REPAIRS - - - - -	—	—	48	45	—	—
			<b>TOTAL - - -</b>	<b>2,572</b>	<b>2,370</b>	<b>4,639</b>	<b>4,465</b>	<b>1,377</b>	<b>1,377</b>
	S.	-	CONTINGENCIES (WORKS AND REPAIRS) - - - - -	109	131	—	—	—	—
	T.	-	TEMPORARY SUPERINTENDENCE OF ENGINEERING AND ARCHITECTURAL WORKS AND REPAIRS.	—	—	23	50	—	—
			<b>Total, Vote 11—(MARINE DIVISIONS ONLY) - - -</b>	<b>2,681</b>	<b>2,501</b>	<b>4,662</b>	<b>4,515</b>	<b>3,588</b>	<b>3,588</b>
			<b>Total, Votes 1, 2, 9, and 11 - - -</b>	<b>73,143</b>	<b>73,109</b>	<b>72,840</b>	<b>72,456</b>	<b>101,954</b>	<b>101,954</b>
15	-	-	<b>Vote 15.—Half Pay, Reserved Half Pay, and Retired Pay - - -</b>	—	—	—	—	—	—
16, Sect. I.	-	-	<b>Vote 16.—Sect. I.—Military Pensions and Allowances - - -</b>	—	—	—	—	—	—
Sect. II.	-	-	<b>Sect. II.—Civil Pensions and Allowances - - -</b>	—	—	—	—	—	—
			<b>TOTAL—Division 4.—Marine - - -</b>	<b>73,143</b>	<b>73,109</b>	<b>72,840</b>	<b>72,456</b>	<b>101,954</b>	<b>101,954</b>

Note.—The Amounts for Vote 1 in the Grant Column, in the actual Expenditure Column, and in the Vote 1 Column, are the actual Expenditure incurred.

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**DIVISION 5.**

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**C O A S T G U A R D.**

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YMOUTH.

ants for Half Pay and Pensions are shown in the Column for "Other than Divisions," as the principle adopted in this Return is to apportion Half Pay and Pensions to the specific Divisions 1 to 8 only, it being considered \$0 into greater detail than this. Hence in this Sheet the Total amount only for Division 4, "Marine," is given.



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**DIVISION 5.**

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**COAST GUARD, &c.**

(DETAILS of PAGES 46 and 47.)

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## RETABULATION of the SURPLUSES AND DEFICITS.—DIVISION 5. COAST GUARD (for Details, see pages 50 and 51).

Number of Vote.	Page in this Account.	TITLE OF VOTE.	DIVISION 5 COAST GUARD.		HULL DISTRICT.		HARWICH DISTRICT.		NEWHAVEN DISTRICT.		WEYMOUTH DISTRICT.		LIVERPOOL DISTRICT.	
			Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.
			£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.
1	11	WAGES, &c. TO SEAMEN AND MARINES -	375,310	326,325	37,539	32,640	44,119	38,361	60,427	52,540	57,878	50,325	28,575	24,000
4	11	COAST GUARD SERVICE, ROYAL NAVAL COAST VOLUNTEERS, AND ROYAL NAVAL RESERVE, &c.	47,793	47,475	5,041	5,005	5,852	5,815	7,941	7,946	7,183	7,160	3,572	3,000
11	11	NEW WORKS, BUILDINGS, AND REPAIRS	31,198	25,599	4,426	3,895	6,388	4,759	8,182	6,578	6,880	—	—	—
		TOTAL FOR EFFECTIVE SERVICE -	454,301	399,399	47,006	41,540	56,359	48,935	76,550	67,064	71,941	63,241	—	—
16	11	CIVIL PENSIONS AND ALLOWANCES	55,048	53,299	—	—	—	—	—	—	—	—	—	—
SECT. II		GRAND TOTAL (DIVISION 5.) COAST GUARD -	£. 509,349	452,698	47,006	41,540	56,359	48,935	76,550	67,064	71,941	63,241	—	—
		HULL - - - - -			47,006	41,540								
		HARWICH - - - - -			56,359	48,935	56,359	48,935						
		NEWHAVEN - - - - -			76,550	67,064			76,550	67,064				
		WEYMOUTH - - - - -			71,941	63,241					71,941	63,241		
		LIVERPOOL - - - - -			34,945	30,798							34,945	30,000
		LEITH AND CLYDE - - - - -			50,989	44,743								
		KINGSTOWN - - - - -			70,252	62,230								
		LIMERICK - - - - -			46,259	40,848								
		TOTAL Coast Guard Districts - -			454,301	399,399								
		OTHER than DISTRICTS - - -			55,048	53,299								
		TOTAL—Division 5 (Coast Guard) - - - - -	£. 509,349	452,698										

Note.—This sheet is prepared, strictly speaking, as a Retabulation of the Appropriation Account (part of Parliamentary Paper, No. 36, of Session 1877), which only shows the Total of each Vote. The Statement of Surpluses and Deficits (also part of Parliamentary Paper, No. 36, of Session 1877).



## RETABULATION of the SURPLUSES AND DEFICITS.—DIVISION 5. COAST GUARD (for DETAILS, see pages 50 and 51).

FORTH and CLYDE DISTRICTS.		KINGSTOWN DISTRICT.		LIMERICK DISTRICT.		TOTAL, COAST GUARD DISTRICTS.		OTHER than DISTRICTS.		TOTAL, DIVISION 5. COAST GUARD.		Number
Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Vote.
£	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	
45,323	39,580	60,649	52,733	40,600	35,301	375,310	326,325	—	—	375,310	326,325	1
3,175	3,128	9,444	9,386	5,585	5,495	47,793	47,475	—	—	47,793	47,475	4
2,291	2,035	159	111	74	52	31,198	25,599	—	—	31,198	25,599	11
50,989	44,743	70,252	62,230	46,259	40,848	454,301	399,399	—	—	—	—	
—	—	—	—	—	—	—	—	55,048	53,299	55,048	53,299	16 Sect II.
50,989	44,743	70,252	62,230	46,259	40,848	454,301	399,399					
50,989		70,252		46,259		454,301		55,048		509,349		
44,743		62,230		40,848		399,399		53,299		452,698		

Is but, the same as the Appropriation Account, except that in the former Account the Amounts of the Sub-heads of each Vote are given. The Retabulation, pages 50 and 51, showing details as per Sub-heads, is therefore given as a Retabulation of the Statement of the Surpluses and Deficits.



VOTE 3.—ADMIRALTY OFFICE.

SUMMARY as posted into ABSTRACT SHEET, pages 10 and 11.

	Expenditure, 1875-76.		Grant, 1875-76.	
	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.
Division 8.—Control, &c. - - - -	14	187,809	14	183,916





NOTE 4.—COAST GUARD SERVICE, ROYAL NAVAL COAST VOLUNTEERS, AND  
ROYAL NAVAL RESERVE, &c.

ANALYSIS to show Amounts to be Debited to each Division.

SUB-HEADS.	DIVISION 5. COAST GUARD.				DIVISION 7. FLEET.				DIVISION 8. CONTROL, &c.			
	Expenditure, 1875-76.		Grant, 1875-76.		Expenditure, 1875-76.		Grant, 1875-76.		Expenditure, 1875-76.		Grant, 1875-76.	
	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.
Salaries, Wages, &c., Royal Naval Reserves Office -	-	-	-	-	-	-	-	-	14	3,934	21	4,330
Repairs, Rates, Taxes, and Insurance of Buildings, Coast Guard Establishments on Shore -	14	28,495	20	29,065	-	-	-	-	-	-	-	-
Selling Expenses, Removal of Officers and Men and their Families, &c., Coast Guard Establishments on Shore -	"	11,925	"	11,211	-	-	-	-	-	-	-	-
Land and Light, Coast Guard Establishments on Shore -	"	4,326	"	4,301	-	-	-	-	-	-	-	-
Contingencies, Coast Guard Establishments on Shore -	"	3,047	"	2,898	-	-	-	-	-	-	-	-
Royal Naval Reserve; Wages, Allowances, &c. -	-	-	-	-	14	131,904	20	134,700	-	-	-	-
Army and Marine Pensioners' Reserve -	-	-	-	-	"	552	"	1,000	-	-	-	-
Royal Naval Artillery Volunteer Force -	-	-	-	-	"	1,420	"	1,000	-	-	-	-
<b>TOTAL - - -</b>	-	<b>47,793</b>	-	<b>47,475</b>	-	<b>133,876</b>	-	<b>136,700</b>	-	<b>3,934</b>	-	<b>4,330</b>

SUMMARY as posted into ABSTRACT SHEET, pages 10 and 11.

	Expenditure, 1875-76.		Grant, 1875-76.	
	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.
DIVISION 5.—Coast Guard - - -	-	47,793	21	47,475
DIVISION 7.—Fleet - - -	-	133,876	-	136,700
DIVISION 8.—Control - - -	14	3,934	20	4,330
<b>TOTAL, Vote 4 - - -</b>	<b>14</b>	<b>185,603</b>	<b>20</b>	<b>188,505</b>



VOTE 5. -SCIENTIFIC BRANCH.

SUMMARY as posted into ABSTRACT SHEET, pages 10 and 11.

	Expenditure, 1875-76.		Grant, 1875-76.	
	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.
Division 3.—Medical - - - - -	16	104	23	100
Division 7.—Fleet - - - - -	-	25,820	-	29,000
Division 8.—Control, &c. - - - - -	-	81,338	-	78,224
TOTAL, Vote 5 - - - - -	18	107,262	23	107,324

With the exception of Item L, "Libraries and Museums at Haslar and Plymouth Hospitals," which is Medical, and P, "Coast and other Surveys," and T, "Instruction, at the Army Medical School at Netley, of Candidates for Appointments to the Medical Service of the Royal Navy," which are directly for the benefit of the Fleet, this Vote is posted to Division 8—Control, as much of it exists for General and National purposes, and not simply for the Fleet only.





VOTE 6.—DOCKYARDS AND NAVAL YARDS AT HOME  
AND ABROAD.

SUMMARY as posted into ABSTRACT SHEET, pages 10 and 11.

	Expenditure, 1875-76.		Grant, 1875-76.	
	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.
Division 1.—Naval Yards	20	1,356,369	-	* 1,326,649

\* Including Supplementary Estimate.



VOTE 7.—VICTUALLING YARDS AT HOME AND ABROAD.

SUMMARY as posted into ABSTRACT SHEET, pages 10 and 11.

	Expenditure, 1875-76.		Grant, 1875-76.	
	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.
Division 2.—Victualling - - - - -	24	74,339	-	75,548





VOTE 8.—MEDICAL ESTABLISHMENTS AT HOME AND ABROAD.

SUMMARY as posted into ABSTRACT SHEET, pages 10 and 11.

	Expenditure, 1875-76.		Grant, 1875-76.	
	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.
Division 3.—Medical - - - - -	28	65,194	78	64,644



VOTE 9.—MARINE DIVISIONS.

SUMMARY as posted into ABSTRACT SHEET, pages 10 and 11.

	Expenditure, 1875-76.		Grant, 1875-76.	
	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.
Division 4. —Marine      -   -   -   -	28	18,204	94	18,868





VOTE 10. SECTIONS I. and II.—NAVAL STORES FOR THE BUILDING, REPAIR, AND OUTFIT OF THE FLEET AND COAST GUARD, STEAM MACHINERY, AND SHIPS BUILT BY CONTRACT.

SUMMARY as posted into ABSTRACT SHEET, pages 10 and 11.

		Expenditure, 1875-76.		Grant, 1875-76.	
		Page in Surpluses and Deficits.	£.	Page in Estimates.	£.
Sect. I. Naval Stores.	Division 1.—Naval Yards - -	30	1,270,048	-	*1,285,770
Sect. II. Steam Machinery and Ships Built by Contract.	Division 1.--Naval Yards - -	32	913,675	-	*903,608
	TOTAL - - -	-	2,183,723	-	*2,189,378

\* Including Supplementary Estimates.



## VOTE 11.—NEW WORKS, BUILDINGS, MACHINERY, AND REPAIRS.

Sub-head of VOTE No. 11, have been distributed over the several Divisions,

SUB-HEADS.	TOTAL as per Statement of SURPLUSES AND DEFICITS, 1875-76.		DIVISION 1, NAVAL YARDS.		DIVISION 2, VICTUALLING.		DIVISION 3, MEDICAL.		DIVISION 4, MARINE.		DIVISION 5, COAST GUARD.		DIVISION 7, FLEET.		DIVISION 8, CONTROL, &c.	
	Expenditure, 1875-76.		Expenditure, 1875-76.		Expenditure, 1875-76.		Expenditure, 1875-76.		Expenditure, 1875-76.		Expenditure, 1875-76.		Expenditure, 1875-76.		Expenditure, 1875-76.	
	Page 1 South Estimate	Page 2 North Estimate	Page 1 South Estimate	Page 2 North Estimate	Page 1 South Estimate	Page 2 North Estimate	Page 1 South Estimate	Page 2 North Estimate	Page 1 South Estimate	Page 2 North Estimate	Page 1 South Estimate	Page 2 North Estimate	Page 1 South Estimate	Page 2 North Estimate	Page 1 South Estimate	Page 2 North Estimate
Works, &c.—Chatham - - - -	34	94,082	104	94,082	94,082	94,082	—	—	—	—	—	—	—	—	—	—
Do - - - Sheerness - - - -	30	17,040	—	18,250	17,040	18,250	—	—	—	—	—	—	—	—	—	—
Do - - - Portsmouth - - - -	—	218,150	105	229,645	218,150	229,645	—	—	—	—	—	—	—	—	—	—
Do - - - Devonport and Keyham -	38	61,805	106	60,609	61,805	60,609	—	—	—	—	—	—	—	—	—	—
Do - - - Pembroke - - - -	40	15,738	—	16,201	15,738	16,201	—	—	—	—	—	—	—	—	—	—
Do - - - Harbowlane - - - -	—	24,609	—	31,480	24,609	31,480	—	—	—	—	—	—	—	—	—	—
Do - - - Breakwaters - - - -	42	14,460	107	16,100	—	3,020	—	—	—	—	—	—	—	—	—	—
Do - - - Lewes, &c. - - - -	—	289	—	300	—	—	—	—	—	—	—	—	11,446	13,140	—	—
Do - - - Victualling Establishments at Home -	—	7,401	108	8,036	—	7,401	8,036	—	—	—	—	—	289	300	—	—
Do - - - Medical Establishments at Home -	44	9,806	109	10,015	—	—	—	9,806	10,015	—	—	—	—	—	—	—
Do - - - Marine Barracks - - - -	—	16,887	110	14,705	—	—	—	—	—	16,887	14,705	—	—	—	—	—
Do - - - Coast Guard - - - -	46	30,924	—	25,000	—	—	—	—	—	—	—	30,924	25,000	—	—	—
Do - - - at the Admiralty Offices at Whitehall -	—	10,084	—	10,084	—	—	—	—	—	—	—	—	—	—	10,084	10,084
Do - - - Works, Royal Naval Colleges - - - -	—	7,500	—	7,500	—	—	—	—	—	—	—	—	—	—	—	—
Do - - - Naval Establishments Abroad (for details, see below) -	—	67,167	113	71,540	60,845	71,540	—	—	—	—	—	—	—	7,500	7,500	—
Do - - - Victualling Establishments Abroad -	50	1,120	—	2,360	—	1,120	2,360	—	—	—	—	—	—	—	—	—
Do - - - Medical Establishments Abroad -	52	6,593	114	3,470	—	—	—	6,593	3,470	—	—	—	—	—	—	—
Do - - - Contingencies (Work and Repairs) -	—	9,900	—	10,000	6,037	5,000	27	—	—	—	—	—	—	—	—	—
Do - - - (Machinery) - - - -	—	2,073	—	3,000	1,663	3,000	410	1,000	567	681	2,120	2,545	—	—	443	532
Do - - - Secretary Superintendence of Engineering and Architectural Works and Repairs -	—	9,448	—	11,500	7,946	7,270	108	—	203	574	168	367	274	509	1,074	2,947
TOTAL - - -	—	625,087	—	644,751	611,004	611,005	9,124	11,206	17,229	14,740	10,175	17,707	31,198	25,599	20,964	23,819

## DETAILS of Sub-Head P.

EXPENDITURE for each NAVAL ESTABLISHMENT ABROAD, 1875-76.

DIVISION 1, NAVAL YARDS.						DIVISION 7, FLEET.	
BUILDINGS.		MACHINERY.		DREDGING.			
Additions.	Repairs.	Additions.	Repairs.	In Connection with Dockyard.	Not in Connection with Dockyard.		
£.	£.	£.	£.	£.	£.		
7,100	1,457	740	97	—	—		
2,360	1,358	1,058	1,101	—	2,041		
2,000	3,937	5,134	1,080	4,980	—		
1,280	2,903	606	198	—	—		
—	1,817	—	—	—	—		
—	310	—	—	—	—		
—	—	—	—	—	—		
—	1,800	—	7	—	—		
1,280	5,625	—	150	—	—		
—	912	—	—	—	—		
—	6,004	—	225	—	—		
—	2,586	—	—	—	—		
£	14,740	—	2,774	4,980	2,041		

£. 67,167.

## SUMMARY of VOTE 11 as posted in ABSTRACT SHEET, pages 10 and 11.

Division 1.—Naval - - - -	Expenditure, 1875-76.		Grant, 1875-76.	
	Page In Surplus and Deficit.	£.	Page In Estimates.	£.
2.—Victualling - - - -	—	9,124	—	11,296
3.—Medical - - - -	—	17,229	—	14,740
4.—Marine - - - -	—	19,175	—	17,707
5.—Coast Guard - - - -	—	31,198	—	25,599
7.—Fleet - - - -	—	26,964	—	23,819
8.—Control, &c. - - - -	—	10,393	—	10,585
TOTAL, Vote 11 - - - -	52	625,087	—	644,751





VOTE 12.—MEDICINES AND MEDICAL STORES, &c.

SUMMARY as posted into ABSTRACT SHEET, pages 10 and 11.

					Expenditure, 1875-76.		Grant, 1875-76.	
					Page in Surpluses and Deficits.	£.	Page in Estimates.	£.
Division 3.—Medical	-	-	-	-	64	74,750	-	* 73,530

\* Including Supplementary Estimates.



## VOTE 13.—MARTIAL LAW AND LAW CHARGES.

ANALYSIS to show Amounts to be Debited to each Division.

SUB-HEADS.	DIVISION 7. FLEET.				DIVISION 8. CONTROL, &c.			
	Expenditure, 1875-76.		Grant, 1875-76.		Expenditure, 1875-76.		Grant, 1875-76.	
	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.
—Legal Department - - - -	-	-	-	-	64	7,566	118	8,538
—Courts Martial - - - -	64	2,772	118	2,000	-	—	-	—
—Naval Prison, Lewes - - - -	„	3,161	„	3,321	-	—	-	—
—Naval Prison, Hong Kong and Bermuda - - - - }	„	404	„	445	-	—	-	—
—Conveyance of Prisoners - - -	„	1,913	„	1,600	-	—	-	—
TOTAL - - -	-	8,250	-	7,366	64	7,566	118	8,538

SUMMARY as posted into ABSTRACT SHEET, pages 10 and 11.

	Expenditure, 1875-76.		Grant, 1875-76.	
	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.
DIVISION 7.—Fleet - - - -	-	8,250	-	7,366
DIVISION 8.—Control, &c. - - - -	64	7,566	118	8,538
TOTAL, Vote 13 - - -	„	15,816	„	15,904





VOTE 14.—MISCELLANEOUS SERVICES.

SUMMARY as posted into ABSTRACT SHEET, pages 10 and 11.

	Expenditure, 1875-76.		Grant, 1875-76.	
	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.
Division 7.—Fleet - - - - -	68	203,530	-	*156,423

Some portion of this might possibly be distributed to other Divisions, but it will be seen, on looking through the items, that they would be mainly for the Fleet, and connected with the Officers and Seamen, as—

- Piloting.
- Passage Money.
- Compensation to Officers for loss by Shipwreck.
- Contributions for Sailors' Homes.
- Contributions for Religious Institutions, &c.

All is therefore put to Division 7—Fleet.

\* Including Supplementary Estimate.



OTE 15.—HALF PAY, RESERVED HALF PAY, AND RETIREMENT, TO OFFICERS OF THE NAVY AND ROYAL MARINES.

ANALYSIS to show AMOUNTS to be Debited to each DIVISION.

SUB-HEADS.	DIVISION 4. MARINE.				DIVISION 7. FLEET.				TOTAL.			
	Expenditure, 1875-76.		Grant, 1875-76.		Expenditure, 1875-76.		Grant, 1875-76.		Expenditure, 1875-76.		Grant, 1875-76.	
	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.
Half Pay, Reserved and Re- tired Pay - - - - - }	-	50,521	124	56,187	-	718,046	-	720,720	70	768,567	-	*776,907
Commutation of Retired Pay -	-	16,913	-	16,913	-	95,691	-	95,691	„	112,604	124	112,604
TOTAL - - -	-	67,434	-	73,100	-	813,737	-	816,411	„	881,171	-	*889,511

SUMMARY as posted into ABSTRACT SHEET, pages 10 and 11.

	Expenditure, 1875-76.		Grant, 1875-76.	
	Page in Surpluses and Deficits.	£.	Page in Estimates.	£
	No pages can be given, as these special Amounts are obtained from the above State- ment.		No pages can be given, as these special Amounts are obtained from the above State- ment.	
DIVISION 4.—Marine	-	67,434		73,100
DIVISION 7.—Fleet	-	813,737		816,411
TOTAL, Vote 15	70	881,171		*889,511

\* Including Supplementary Estimate.





## VOTE 16.—SECTION I.—MILITARY PENSIONS AND ALLOWANCES.

ANALYSIS to show Amounts to be Debited to each Division.

	DIVISION 3. MEDICAL.				DIVISION 4. MARINE.				DIVISION 7. FLEET.				TOTAL			
	Expenditure, 1875-76.		Grant, 1875-76.		Expenditure, 1875-76.		Grant, 1875-76.		Expenditure, 1875-76.		Grant, 1875-76.		Expenditure, 1875-76.		Grant, 1875-76.	
	£.	Page in Estimates.	£.	Page in Estimates.	£.	Page in Estimates.	£.	Page in Estimates.	£.	Page in Estimates.	£.	Page in Estimates.	£.	Page in Estimates.	£.	Page in Estimates.
Pensions for Good and Meritorious Services	-	-	-	-	770	160	1,600	-	4,052	-	5,900	70	5,722	125	7,500	-
Pensions for Conspicuous Bravery	-	-	-	-	11	-	-	-	177	-	220	"	218	"	240	-
Flaz Officers' Retired Service Pensions	-	-	-	-	-	-	-	-	353	125	450	"	353	"	450	-
Pensions and Gratuities for Wounds and Injuries received in the Service	-	-	-	-	104	-	72	-	0,690	-	8,314	"	9,854	"	9,036	-
Pensions to Engineers, Warrant Officers, &c.	-	-	-	-	-	-	-	-	67,324	125	67,073	"	67,324	"	67,073	-
Pensions to Widows and Relatives of Officers, &c.	-	-	-	-	218	100	250	-	12,500	-	12,385	"	12,718	"	12,635	-
Pensions to Widows of Naval Officers	-	-	-	-	-	-	-	-	132,218	125	133,846	"	132,218	"	133,846	-
Pensions to Widows of Marine Officers	-	-	-	-	8,494	-	9,244	-	-	-	-	"	8,494	"	9,244	-
Compassionate List	-	-	-	-	1,000	-	1,137	-	17,040	-	16,663	"	18,400	"	18,000	-
Compensation Allowances to Lieutenants, late of Naval Hospitals, on Loss of Appointments	70	265	125	265	-	-	-	-	-	-	-	"	265	"	265	-
Pensions to Old and Disabled Commissioned Officers	-	-	-	-	-	-	-	-	5,063	125	5,025	"	5,063	"	5,025	-
Pensions and Gratuities to Seamen and Marines	-	-	-	-	120,346	160	115,698	-	322,801	-	302,139	"	443,187	"	417,837	-
Commutation of Military Pensions	-	-	-	-	288	-	-	-	9,742	-	9,742	"	10,030	"	10,030	-
TOTAL	70	265	125	265	-	131,730	129,150	-	571,860	-	552,357	"	703,855	"	681,781	-

SUMMARY as posted into ABSTRACT SHEET, pages 10 and 11.

	Expenditure, 1875-76.		Grant, 1875-76.	
	£.	Page in Estimates.	£.	Page in Estimates.
Division 3.—Medical	265	265	265	265
" 4.—Marine	131,730		129,150	
" 7.—Fleet	571,860		552,357	
TOTAL, VOTE 16.—SECTION I.—MILITARY PENSIONS AND ALLOWANCES	70	703,855	125	681,781



			S A L A		a Pension Fund employed in the nts at Home.	F. Commutation of Civil Pensions.				T O T A L.			
			Expend 1875-	Grant, 1875-76.	Expenditure, 1875-76.	Grant, 1875-76.	Expenditure, 1875-76.	Grant, 1875-76.	Expenditure, 1875-76.	Grant, 1875-76.			
			Page in Surpluses and Deficits.	Estimates.	£.	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.
1.—Naval Yards			-	-	1,500	No pages can be given, as the Amounts Expended and shown here do not appear in the Statement of Surpluses and Deficits, which gives only the Total Sum Expended against each Detailed Head of the Vote, and not the Amounts for each Division against those Heads.							
2.—Victualling			-	-	270								
3.—Medical			-	-	90								
4.—Marine			-	-	—								
5.—Coast Guard			-	-	—								
6.—Transport			-	-	—								
7.—Fleet			-	-	150								
8.—Control, &c.			-	-	60								
TOTAL			-	-	2,070	72 25 2,070 72 16,589 125 16,589 72 284,424 125 284,520							





VOTE 17.—ARMY DEPARTMENT (CONVEYANCE OF TROOPS)

SUMMARY, as posted into ABSTRACT SHEET, pages 10 and 11.

	Expenditure, 1875-76.		Grant, 1875-76.	
	Page in Surpluses and Deficits.	£.	Page in Estimates.	£.
Division 6.--Transport - - - - -	76	181,300	136	172,090



E S T I M A T E

FOR

GREENWICH HOSPITAL AND SCHOOL,

FOR THE YEAR 1877-78.

(The Expenditure to be repaid from Greenwich Hospital Funds, per Acts 28 & 29 Vict. c. 89,  
and 33 & 34 Vict. c. 100.)

(PRESENTED TO PARLIAMENT BY HER MAJESTY'S COMMAND.)

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*Ordered, by The House of Commons, to be Printed,*  
*24 March 1877.*

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## GREENWICH HOSPITAL AND SCHOOL.

## I. ESTIMATE of the Sum which will be required in the Year ending 31st March 1878, to defray the EXPENSES of GREENWICH HOSPITAL and SCHOOL.

One Hundred and Forty-two Thousand Three Hundred and Eighty-five Pounds.

(The Expenditure to be repaid from Greenwich Hospital Funds to Her Majesty's Exchequer, and form part of the Consolidated Fund, per Acts 28 &amp; 29 Vict. c. 89, and 33 &amp; 34 Vict. c. 100.)

## II. SUB-HEADS under which this Vote will be accounted for.

	1877-78.	1876-77.
<b>GREENWICH HOSPITAL.</b>	<b>£.</b>	<b>£.</b>
A.—GREENWICH HOSPITAL BRANCH (ADMIRALTY) - - -	1,532	1,518
B.—COMMUTED RATE FOR WORK PERFORMED IN THE SEVERAL DEPARTMENTS OF THE ADMIRALTY - - -	700	700
C.—VISITOR AND GOVERNOR OF GREENWICH HOSPITAL - -	434	434
D.—MISCELLANEOUS DISBURSEMENTS - DITTO - - -	67	67
E.—PAINTED HALL - - - - - DITTO - - -	437	716
F.—CHAPEL - - - - - DITTO - - -	110	
G.—SUPERANNUATION ALLOWANCES - - - DITTO - - -	3,410	3,483
TOTAL—GREENWICH HOSPITAL - - - £.	6,690	6,918
<b>PENSIONS, GRATUITIES, &amp;c.</b>		
H.—PENSIONS TO FLAG AND OTHER OFFICERS - - - -	5,720	5,765
I.—AGE PENSIONS TO SEAMEN AND MARINES - - - -	73,392	69,694
K.—SPECIAL PENSIONS TO - DITTO - - - -	20,000	20,000
L.—MAINTENANCE OF MEN IN NAVAL HOSPITALS - - -	8,550	8,550
M.—PENSIONS TO MERCHANT SEAMEN - - - - -	50	50
M.M.—SPECIAL PENSIONS TO WARRANT OFFICERS - - -	250	250
N.—GRATUITIES TO WIDOWS OF SEAMEN AND MARINES - -	1,500	1,500
N.N.—DITTO ORPHAN CHILDREN AND PARENTS OF DITTO -	500	500
O.—MAINTENANCE AND EDUCATION OF DAUGHTERS OF SEAMEN AND MARINES IN SCHOOLS OR HOMES - - - -	4,000	3,000
P.—DITTO - OF SONS OR DAUGHTERS OF OFFICERS OF ROYAL NAVY AND MARINES - - - - -	1,000	600
TOTAL—PENSIONS, GRATUITIES, &c. - - - £.	114,962	109,909
<b>GREENWICH HOSPITAL SCHOOL.</b>		
Q.—SALARIES AND ALLOWANCES, GREENWICH SCHOOL -	2,713	2,676
R.—LIGHTING WITH GAS - - - - - DITTO - -	400	350
S.—CONTINGENCIES - - - - - DITTO - -	1,155	1,085
T.—WAGES - - - - - DITTO - -	3,233	3,363
U.—WASHING AND EXPENSES OF LAUNDRY - DITTO -	450	509
V.—REPAIRS AND MAINTENANCE OF BUILDINGS, DITTO -	1,798	1,913
W.—ADDITIONS AND ALTERATIONS TO SCHOOL BUILDINGS - - - - - DITTO - -	—	8,000
X.—PROVISIONS - - - - - DITTO - -	7,000	6,900
X.X.—CLOTHING AND BEDDING - - - - - DITTO -	2,175	2,455
X.X.X.—STORES - - - - - DITTO - -	1,008	963
Y.—MEDICINES AND SURGICAL INSTRUMENTS DITTO - -	100	100
Z.—SUPERANNUATION ALLOWANCES - - - DITTO - -	1,791	1,791
£.	21,823	30,105
Abate—Contribution from Naval Funds - - - £.	1,090	1,180
TOTAL—GREENWICH HOSPITAL SCHOOL - - - £.	20,733	28,925
GRAND TOTAL - - - £.	142,385	145,752

DECREASE - - - £. 3,367.



## III. DETAILS of the foregoing.

	REQUIRED for the Service of the Year 1877-78.	LAST VOTE for the Financial Year 1876-77.
<b>GREENWICH HOSPITAL.</b>		
<b>A.—GREENWICH HOSPITAL BRANCH (ADMIRALTY):</b>	<b>£. s. d.</b>	<b>£. s. d.</b>
One Superintendent of Greenwich Hospital Branch, 400 l., rising by annual increments of 25 l. to 650 l. a year (with Allowance of 100 l. a year, not to be continued to Successor)	750 - -	750 - -
One Clerk (at maximum)	400 - -	400 - -
One ditto, 100 l. to 400 l.	298 - -	279 - -
Two Civil Service Writers	157 - -	157 - -
One Commissionaire	52 - -	52 - -
	1,652 - -	1,638 - -
<i>Abate</i> —For Clerical Duties in Greenwich Hospital Branch on account of Royal Naval College	120 - -	120 - -
£.	1,532 - -	1,518 - -
<b>B.—COMMUTED RATE FOR WORK PERFORMED IN THE SEVERAL DEPARTMENTS OF THE ADMIRALTY:</b>		
In connexion with Greenwich Hospital Business	700 - -	700 - -
Viz.—Medical Department - - - - - £. 150		
Works Department - - - - - 100		
Pension Branch of Secretary's Department - - - 150		
Pension Branch of Accountant General's Department - - - 300		
£. 700		
<b>C.—VISITOR AND GOVERNOR OF GREENWICH HOSPITAL:</b>		
Salary - - - - - £. 1,200		
Abate Retired Pay - - - - - 766	434 - -	434 - -
Allowance to Private Secretary to the Civil Lord of the Admiralty - - - - - 25 - -	25 - -	25 - -
Travelling Expenses, and other Miscellaneous Disbursements - - - - - 42 - -	42 - -	42 - -
<b>D.—MISCELLANEOUS DISBURSEMENTS, } £.</b> <b>GREENWICH HOSPITAL, - - - }</b>	67 - -	67 - -
<b>E.—PAINTED HALL, GREENWICH HOSPITAL:</b>		
Curator of Pictures - - - - - 100 - -	100 - -	716 - -
Wages and Uniforms of Three Yeomen of Painted Hall - 163 - -	163 - -	
Portion of Wages of a Stoker and an Assistant Stoker (remainder of Wages provided under Vote No. 5, Royal Naval College) - - - - - 34 - -	34 - -	
Repairs and Maintenance of Building - - - - - 50 - -	50 - -	
Fuel, Stores, and Repairs of Pictures and Furniture - - 90 - -	90 - -	
	437 - -	
<b>F.—GREENWICH HOSPITAL CHAPEL:</b>		
For half the cost of Repairs and Maintenance of Building - 25 - -	25 - -	716 - -
For half the cost of Fuel, Stores, Repairs of Furniture, and Contingencies - - - - - 85 - -	85 - -	
(The other half of these Expenses is charged to Vote No. 5, Royal Naval College).	110 - -	716 - -

GREENWICH HOSPITAL—continued.			REQUIRED for the Service of the Year 1877-78.	LAST VOTE for the Financial Year 1876-77.
G.—For Superannuation Allowances to Officers, Clerks, Nurses, Servants, &c. - - - - £.			£. s. d. 3,410 - -	£. s. d. 3,483 - -
Number and Description of Superannuations paid out of the above Sum :				
	£.	s. d.		
1 Staff Surgeon - - - - -	257	16 6		
1 Steward - - - - -	694	5 -		
4 Clerks - - - - -	846	10 -		
2 Mates of Victualling - - -	115	2 -		
1 Matron - - - - -	52	8 4		
1 Clerk and Steward of Infirmary -	55	4 -		
2 Assistant Dispensers - - -	142	15 3		
1 Organist - - - - -	40	- -		
1 Master Baker - - - - -	43	9 10		
1 Market Constable - - - - -	25	8 7		
69 Nurses - - - - -	1,016	12 7		
1 Chapel Clerk, &c. - - - - -	12	7 1		
1 Warehouseman - - - - -	74	12 4		
1 Working Foreman Baker - - -	32	15 3		
87	£. 3,409	6 9		
TOTAL GREENWICH HOSPITAL - £.			6,690 - -	6,918 - -
PENSIONS:				
Greenwich Hospital Pensions to 10 Flag Officers, at 150 l. each - - - - -			1,500 - -	1,500 - -
Ditto - - to other Officers, at various rates, viz.:			4,220 - -	4,265 - -
	£.			
Captain - - - - -	1 at 80			
Commanders - - - - -	5 at 35			
Lieutenants - - - - -	5 at 50			
Navigating Officers - - - - -	1 at 80			
	2 at 50			
Chief Inspector of Machinery - - -	1 at 80			
	2 at 65			
Inspectors of Machinery and Chief Engineers	5 at 50			
Chaplains and Naval Instructors - -	7 at 50			
Inspector General of Hospitals and Fleets	1 at 100			
Deputy - - ditto - - - - -	1 at 80			
Fleet and Staff Surgeons - - - - -	16 at 50			
Paymasters in Chief and Paymasters -	13 at 50			
Chief and First Class Gunners - - -	5 at 25			
Chief and First Class Boatswains - -	6 at 25			
Chief and First Class Carpenters - -	4 at 25			
Field Officers, Royal Marines - - -	4 at 80			
Captains - - ditto - - - - -	5 at 50			
H.—PENSIONS to FLAG and other } OFFICERS - - - - - } £.			5,720 - -	5,765 - -
264 Greenwich Hospital (Life) Pensions, at 13 l. 12 s. per annum, granted to Men of 65 years of age and upwards, who having been Pensioners for a period of not less than 10 years, elected to leave the Hospital on 1st October 1865 - - - - -			3,591 - -	3,659 - -
24 Greenwich Hospital (Life) Pensions, at 7 l. 12 s. per annum, granted to Men of 55 years of age and under 65, who having been Pensioners for upwards of five years, elected to leave the Hospital on the 1st October 1865 - - - - -			183 - -	350 - -
Money Allowances to the above Men, and also to 56 others, who, being In-pensioners of the Hos- pital, did not come within the regulations for an award of Greenwich Hospital Pensions, but, not- withstanding which, elected to leave it and revert to the Naval Pensions they had given up on ad- mission, such allowances being granted only to the In-pensioners who left Greenwich Hospital under the re-organisation in 1865 - - - - -			4,213 - -	4,649 - -
2,419 Greenwich Hospital (Life) Pensions of 13 l. 12 s. per annum to Naval Pensioners of 65 years of age and upwards, who have been Naval Pensioners for a period of not less than 10 years - - - - -			32,899 - -	31,457 - -
4,277 Greenwich Hospital (Life) Pensions of 7 l. 12 s. per annum to Naval Pensioners of 55 years of age and under 65, who have been Naval Pensioners for a period of not less than five years, and others who may be entitled to this pension under the Regu- lations - - - - -			32,506 - -	29,579 - -
6,984				
I.—AGE PENSIONS to SEAMEN and MARINES - £.			73,392 - -	69,694 - -

GREENWICH HOSPITAL—continued.		REQUIRED for the Service of the Year 1877-78.	LAST VOTE for the Financial Year 1876-77.
PENSIONS—continued.		£. s. d.	£. s. d.
K.—SPECIAL GREENWICH HOSPITAL PENSIONS to Men eligible to the benefits of Greenwich Hospital, in lieu of admission into any Naval Hospital - - - - -	£.	20,000 - -	20,000 - -
For repayment to Naval Funds (Vote No. 12) for the expense of maintaining in Naval Hospitals or Infirmaries Men eligible to the benefits of Greenwich Hospital, viz.: at a Commuted Rate of 2 s. 6 d. a day - - - - -		7,100 - -	7,100 - -
For ditto to Seamen's Hospital Society for - ditto - -		350 - -	350 - -
For Money allowances to the above, at 1 s. a-week, and allowances to the wives and families of married Naval Pensioners, at 3 s. a-week - - - - -		500 - -	500 - -
For Medical Examination of applicants for benefits of Greenwich Hospital - - - - -		300 - -	300 - -
For Expense of conveyance to and from Naval Hospitals, &c. - - - - -		100 - -	100 - -
For Medicines and Surgical Appliances supplied to Out-Patients at the various Naval Hospitals - - - - -		200 - -	200 - -
L.—MAINTENANCE OF MEN in NAVAL HOSPITALS - £.		8,550 - -	8,550 - -
*M.—PENSIONS to MERCHANT SEAMEN - - £. (who paid sixpence a month to Greenwich Hospital.)		*50 - -	*50 - -
M. M.—SPECIAL PENSIONS to WARRANT OFFICERS £. (who paid sixpence a month to Greenwich Hospital.)		250 - -	250 - -
N.—Gratuities to Widows of Seamen and Marines slain, killed, or drowned in the service of the Crown - - -		1,500 - -	1,500 - -
N. N.—Ditto to Children of ditto, being total Orphans; also to Parents in distressed circumstances - - -		500 - -	500 - -
O.—Maintenance and Education of Daughters of Seamen and Marines in Schools or Homes - - - - -		4,000 - -	3,000 - -
P.—Ditto - - of Sons or Daughters of Officers of the Royal Navy and Marines - - - - -		1,000 - -	600 - -
TOTAL PENSIONS, GRATUITIES, &c. - - - £.		114,962 - -	109,909 - -

\*Note.—Amount paid out of Greenwich Hospital Votes in Pensions to Merchant Seamen, under the Act of 1869, 32 & 33 Vict. c. 44:—

	£.	s.	d.
1869-70 - - - - -	188	-	11
1870-71 - - - - -	5,649	5	9
1871-72 - - - - -	3,840	7	3
1872-73 - - - - -	3,813	18	1
1873-74 - - - - -	3,290	13	2
1874-75 - - - - -	135	3	7
1875-76 - - - - -	26	12	-
	£. 16,944	-	9

Amount advanced to Board of Trade, out of Greenwich Hospital Funds, for purchase of Annuities to Merchant Seamen entitled to Pensions, under the Act of 1872, 35 & 36 Vict. c. 67:—

	£.	s.	d.
1872-73 - - - - -	20,000	-	-
1873-74 - - - - -	36,000	-	-
1874-75 - - - - -	27,000	-	-
1875-76 - - - - -	7,400	-	-
1876-77 to 31 December 1876 - - - - -	10,000	-	-
	£. 100,400	-	-

	REQUIRED for the Service of the Year 1877-78.	LAST VOTE for the Financial Year 1876-77.
<b>GREENWICH HOSPITAL SCHOOL.</b>		
	£. s. d.	£. s. d.
Superintendent, 400 l., rising by annual increments of 25 l. to 500 l. (with residence)*	500 - -	500 - -
Medical Officer ( ditto )	350 - -	350 - -
Chaplain † - ( ditto )	200 - -	200 - -
Cashier and Storekeeper (with residence), 150 l. to 200 l. †	165 - -	150 - -
Clerk, 90 l. to 300 l. - ( ditto )	300 - -	300 - -
Head Master and Training Master of Pupil Teachers, from 230 l. to 260 l. per annum (with residence)	260 - -	252 - -
One Master (with residence)	170 - -	170 - -
One ditto ( ditto )	170 - -	170 - -
One ditto ( ditto )	170 - -	150 - -
One ditto, from 140 l. to 170 l. per annum (with residence)	162 - -	152 - -
One Music Master and Organist (with residence)	100 - -	100 - -
Allowances to two Masters for teaching French	50 - -	50 - -
Allowances for Extra Instruction to Pupil Teachers	100 - -	100 - -
Allowance to a Master for performing the duties of Organist	- - -	20 - -
Compensation to Officers occupying Official Residences for payment of House Duty	16 - -	12 - -
Q.—SALARIES and ALLOWANCES, GREENWICH } HOSPITAL SCHOOL - - - - - } £.	2,713 - -	2,676 - -
R.—Lighting the School with Gas - - - - -	400 - -	350 - -
Easter Offering to Vicar of Greenwich - - - - -	10 - -	10 - -
Lessons in Drawing - - - - -	45 - -	45 - -
Monitorial Allowances to Pupil Teachers, and for Instruction of the Boys in French - - - - -	320 - -	250 - -
Books and Stationery - - - - -	325 - -	325 - -
Library - - - - -	30 - -	30 - -
Musical Instruments and Music - - - - -	30 - -	30 - -
Funerals - - - - -	10 - -	10 - -
Expense of sending Boys to their Homes - - - - -	40 - -	40 - -
Games and Treats for Boys - - - - -	100 - -	100 - -
Extra Medical Officer - - - - -	35 - -	35 - -
Roman Catholic Priest - - - - -	25 - -	25 - -
Allowance to Clerk conducting Local Audit - - - - -	20 - -	20 - -
Pocket Money to Petty Officer Boys - - - - -	50 - -	50 - -
Postage, Advertisements, and other Miscellaneous Expenses	115 - -	115 - -
S.—CONTINGENCIES, GREENWICH HOSPITAL } SCHOOL - - - - - } £.	1,155 - -	1,085 - -

\* In addition to Retired Pay.

† In addition to Half-pay.



## GREENWICH HOSPITAL SCHOOL—continued.

## T.—WAGES :

the Wages and Clothing of Staff of Servants, viz. :—

	Rate of Wages.	Wages.	Clothing.		
		£. s. d.	£. s. d.		
Allowance to a Boatswain, R. N., borne on the books of H.M.S. "Fisgard," for Instruction of Boys -	-	10	-		
School Serjeants	2 at 70l. to 80l.	150	11 4		
First Class School Corporal and Compass Instructor -	60 l. to 70 l.	70	4 10		
*Ditto - - ditto - - and Sail Maker		70	4 10		
*Ditto - - ditto - - and Gymnastic Instructor		60	4 10		
*Ditto - - ditto - - and Matmaking Instructor		70	4 10		
Second Class School Corporals	2 at 50l. to 60l.	104	9		
Seamanship Instructor	70 l. to 80 l.	80	5 12		
*Ditto - - ditto	65 l. to 75 l.	75	4 10		
*Ditto - - ditto	2 at 60l. to 70l.	130	9		
Baker	65 l. to 75 l.	70	4 10		
Cook	60 l. to 70 l.	60	2		
Gate Porter	60 l. to 70 l.	70	4 10		
Bandmaster	90 l. to 100 l.	95	5 12		
Master Tailor	90 l. to 100 l.	90	3 1		
Journeyman Tailors	4 at 65 l. 4 s.	260 16	8		
Master Shoemaker	90 l. to 100 l.	90	3 1		
Journeyman Shoemakers	3 at 65 l. 4 s.	185 12	6		
Master Carpenter	80 l. to 90 l.	85	3 1		
Joiner		75	2		
Painter		85	3 1		
Blacksmith		80	3 1		
Plumber and Gasfitter	90 l. to 100 l.	65	3 1		
Engineer		92 10	3 1		
Stoker	60 l. to 70 l.	34 10	1		
(Half wages and clothing provided under "Washing".)					
Mason	80 l. to 90 l.	75	3 1		
Barber	at 39 l.	39	2		
Labourer, for cording Mattrasses, &c.	3 at 50l. to 60l.	45 10	2		
Ditto for General Duties		52	2		
Ditto for Store Duties		52	2		
Lead Seamstress	40 l. to 50 l.	39	2		
Seamstresses	2 at 39 l.	78	4		
INFIRMARY:					
Lead Nurse	60 l. to 70 l.	60	3		
Dispensary Man and Dresser	45 l. to 55 l.	45	4 10		
Cook	at 39 l.	25	2		
Nurses	3 at 39 l.	117	6		
Ditto Temporary	at 39 l.	39	-		
	£.	2,923 18	144 16		
The Wages, Clothing, &c., of the Metropolitan Police employed at the School, viz.:-					
2 Constables, at a commuted Annual Charge of 81 l. 19 s. each			164		165
		£	3,233		3,363
Washing and Expenses of Laundry					
			450		509
	Rate of Wages.	Wages.	Clothing.		
		£. s. d.	£. s. d.		
Stoker	-	34 10	1		
(Half wages and clothing provided under "Wages, School.")					
Man Washer	50 l. to 60 l.	52	2		
Lead Washerwoman	40 l. to 50 l.	47	2		
Woman Washer	at 39 l.	39	2		
	£.	172 10	7		
£. 179 10					
Add—Amount required for Fuel, Soap, Soda, &c.					
270 10					
£. 450					

\* Occupying unfurnished quarters.

	REQUIRED for the Service of the Year 1877-78.	LAST VOTE for the Financial Year 1876-77.
<b>GREENWICH HOSPITAL SCHOOL—continued.</b>		
<b>V.—REPAIRS AND MAINTENANCE OF BUILDINGS:</b>		
For Materials for Repairs and Maintenance of Buildings and keeping the Grounds in order - - - - -	£. s. d. 455 - -	£. s. d. 350 - -
For Covered Ways to Gymnasium - - - - -	270 - -	- - - -
For Extension of Fire Mains - - - - -	- - - -	300 - -
For Tar Paving to Drill Ground - - - - -	720 - -	910 - -
For Moiety of Salary of Clerk of Works (with Residence)	150 - -	150 - -
For Moiety of Cost of Supply of Water to School and Repairs to Plant and Machinery - - - - -	200 - -	200 - -
For Compensation to Clerk of Works for payment of House Duty - - - - -	3 - -	3 - -
The other Moiety of the Cost of the Office of the Clerk of Works and of the Cost of the Supply of Water is chargeable to the Royal Naval College.		
£.	1,798 - -	1,913 - -
W.—Additions and Alterations to School Buildings } to accommodate 1,000 Boys - - - - - } £.	- - - -	8,000 - -
X.—Provisions - - - - - £.	7,000 - -	6,900 - -
X.X.—Clothing and Bedding - - - - - £.	2,175 - -	2,455 - -
X.X.X.—Stores - - - - - £.	1,008 - -	963 - -
Y.—Medicines, Surgical Instruments, and Medical Books - - - - - 150	- - - -	- - - -
Abate—Charge for Royal Naval College provided under Vote No. 12 (Navy Estimates) - - - - - 50	100 - -	100 - -
Z.—Superannuation Allowances to Masters, Nurses, } and others - - - - - } £.	1,791 - -	1,791 - -
Number and Description of Superannuations paid out of the above Sum :		
	£. s. d.	
1 Principal and Chaplain :	350 - -	
7 Masters - - - - -	1,431 - -	
1 Nurse - - - - -	10 - -	
9	- - - -	
	21,823 - -	30,105 - -
† Abate—Contribution from Naval Funds - - -	1,090 - -	1,180 - -
TOTAL GREENWICH HOSPITAL SCHOOL - - - £.	20,733 - -	28,925 - -
TOTAL OF THE WHOLE - - - - - £.	142,385 - -	145,752 - -

† Wages of Senior Pupil Teachers borne on the Books of Her Majesty's Ship "Fisgard"	£.	s.	d.
as ordinary seamen for training for Naval Schoolmasters—Vote No. 1—23 at 1 s. a day	420	-	-
Provision Money to ditto—Vote No. 2—23 at 1 s. 6 d. a day	-	-	630
Contribution for use of gymnasium by Officers of Royal Naval College (Vote No. 5)	-	-	40
	£.	1,090	-

GEORGE WARD HUNT.

MASSEY LOPES.

Admiralty, }  
24 February 1877. }ALGERNON EGERTON,  
Secretary.



GREENWICH HOSPITAL AND SCHOOL.

ESTIMATE

FOR

GREENWICH HOSPITAL AND  
SCHOOL,

FOR THE YEAR 1877-78.

(Presented to Parliament by Her Majesty's Command.)

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*Ordered, by The House of Commons, to be Printed,  
24 March 1877.*

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128.

*Under 1 oz.*



459  
GREENWICH HOSPITAL AND SCHOOL.

APPROPRIATION ACCOUNT.

1875-76.

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APPROPRIATION ACCOUNT of the SUM Granted by Parliament for  
GREENWICH HOSPITAL and SCHOOL for the Year ended 31st March 1876,  
together with the REPORT of the Comptroller and Auditor General  
thereon.

(PRESENTED PURSUANT TO ACT 29 & 30 VICT. c. 39, s. 22.)

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*Ordered, by The House of Commons, to be Printed,*  
*13 February 1877.*

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## VOTE.—GREENWICH HOSPITAL AND SCHOOL. - - - -

ABSTRACT ACCOUNT of the Sum Expended, compared with the SUM GRANTED, for GREENWICH  
Act 29 & 30 Vict.

SERVICE.	GRANT.	EXPENDITURE.	Expenditure compared with Grant.	
			Less than Granted.	More than Granted.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.
GREENWICH HOSPITAL AND SCHOOL - - -	145,088 - -	142,449 1 8	2,638 18 4	—
		Surplus - - - £.	2,638 18 4	

Admiralty,  
30 December 1876.

I certify that this Account has been examined by officers under my directions, in accordance with, and to above is a correct statement as an Appropriation Account of the Receipt and Expenditure of the Grant for

Examined,  
F. A. Hawker.

## GREENWICH HOSPITAL AND SCHOOL. - - - -

ACCOUNT of the Sum Expended, compared with the SUM GRANTED, for GREENWICH HOSPITAL and each Sub-Head

SERVICE.	GRANT.	EXPENDITURE.	Expenditure compared with Grant.	
			Less than Granted.	More than Granted.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.
GREENWICH HOSPITAL:				
A.—Salaried Establishment (Admiralty) - - -	2,841 - -	2,684 14 11	156 5 1	- -
B.—Visitor and Governor of Greenwich Hospital -	434 - -	434 - -	—	—
C.—Rates and Taxes - - - ditto - -	38 - -	36 5 -	1 15 -	- -
D.—Contingencies - - - - ditto - -	170 - -	413 17 5	- -	243 17 5
E.—Wages - - - - - ditto - -	191 - -	195 3 2	- -	4 3 2
Carried forward - - £.	3,674 - -	3,764 - 6	158 - 1	248 - 7

VOTE.—GREENWICH HOSPITAL AND SCHOOL.

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HOSPITAL and SCHOOL, in the Year ended 31 March 1876, prepared in pursuance of cap. 39, sec. 22.

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EXPLANATION OF THE CAUSES OF VARIATION BETWEEN EXPENDITURE AND GRANT.

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(For explanations, *see* following pages.)

*H. Walker,*  
Accountant General of the Navy, and  
Comptroller of Navy Pay.

the extent prescribed by, the Acts 28 & 29 Vict. c. 89, and 29 & 30 Vict. c. 39, and that the Greenwich Hospital and School, for the year ended 31st March 1876.

*Wm. Dunbar,*  
Comptroller General of Her Majesty's Exchequer,  
and Auditor General of Public Accounts.

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GREENWICH HOSPITAL AND SCHOOL.

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SCHOOL, in the Year ended 31 March 1876, showing the Surplus or Deficit upon of the Vote.

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EXPLANATION OF THE CAUSES OF VARIATION BETWEEN EXPENDITURE AND GRANT.

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Surplus.—Arising from the reconstitution of the Greenwich Hospital Branch, and consequent diminished expense.

Surplus.—It having been decided that the water rate for the cemetery should be paid out of the Income Account of Greenwich Hospital, as being a charge on the estate.

Deficit.—Caused by the payment of a gratuity on discharge to a servant formerly on the old establishment of Greenwich Hospital, and by expenses connected with the examination and weeding of the records and papers belonging to the Hospital, and the removal of those selected for preservation to the Public Record Office.

Deficit.—Arising from the charges for clothing having slightly exceeded the Estimate.

ACCOUNT of the Sum Expended, compared with the Sum Granted, for Greenwich Hospital and School, in the Y

SERVICE.	GRANT.	EXPENDITURE.	Expenditure compared with Grant	
			Less than Granted.	More than Granted.
	£. s. d.	£. s. d.	£. s. d.	£. s.
Brought forward - - -	3,674 - -	3,764 - 6	158 - 1	248 -
<b>GREENWICH HOSPITAL—continued.</b>				
F.—Repairs and Maintenance of Buildings - - - } Greenwich Hospital	50 - -	52 9 -	- -	2 9
G.—Stores - - - - - ditto - -	175 - -	183 9 -	- -	8 9
H.—Superannuation Allowances - ditto - -	3,580 - -	3,437 15 10	142 4 2	-
<b>PENSIONS, GRATUITIES, &amp;c.</b>				
I.—Pensions to Flag and other Officers - -	5,795 - -	5,572 1 2	222 18 10	-
K.—Age Pensions to Seamen and Marines - -	67,546 - -	65,388 16 4	2,157 3 8	-
K.K.—Special Pensions to Seamen and Marines -	20,000 - -	22,189 3 8	- -	2,189 3
L.—Maintenance of Men in Naval Hospitals -	9,350 - -	9,845 10 3	- -	495 10
M.—Pensions to Merchant Seamen - - -	50 - -	26 12 -	23 8 -	-
Special Pensions to Warrant Officers - -	- -	4 3 5	- -	4 3
N.—Gratuities to Widows of Seamen, &c. - -	1,500 - -	1,199 18 9	300 1 3	-
N.N.—Gratuities to Orphan Children and Parents of Seamen, &c. - - - -	500 - -	150 - -	350 - -	-
O.—Maintenance and Education of Daughters of Seamen and Marines in Schools or Homes -	2,400 - -	1,632 13 6	767 6 6	-
P.—Maintenance and Education of Sons or Daughters of Officers of Royal Navy and Marines - - - - -	500 - -	354 11 10	145 8 2	-
<b>GREENWICH HOSPITAL SCHOOL:</b>				
Q.—Salaries and Allowances, Greenwich School -	2,636 - -	2,704 14 10	- -	68 14
S.—Lighting with Gas - - - - ditto -	350 - -	398 12 9	- -	48 12
Carried forward - - - £.	118,106 - -	116,904 12 10	4,266 10 8	3,065 3



ended 31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Vote—*continued*.

EXPLANATION OF THE CAUSES OF VARIATION BETWEEN EXPENDITURE AND GRANT.

Deficit.— }  
 Deficit.— } These are merely the differences between actual and estimated expenditure.

Surplus.—Caused by deaths during the year, and by portions of pensions not having been paid within the year.

Surplus.—A pension to a flag officer not awarded, and the pensions brought to account during the year having been less than provided for.

Surplus.—Arising principally from the deaths of some of the pensioners who left Greenwich Hospital in 1865, and the consequent saving of the money allowances granted to them.

Deficit.—Caused by special pensions having been larger than provided for. By Order in Council, 12th December 1874, the amount for each year is limited to 20,000 *l*.; any Excess in one year being met by a corresponding reduction in the following year.

Deficit.—Caused by a larger number of men having been admitted to Naval Hospitals at the expense of Greenwich Hospital funds than provided for.

Surplus.—Arising from the gradual substitution of annuities for pensions under the Greenwich Hospital Act, 35 & 36 Vict. c. 67.

Deficit.—No provision having been made for these pensions, which were authorised by Order in Council of 27th November 1875.

Surplus.—This diminished expenditure arises from a reduced number of claims in the year as compared with the average.

Surplus.—This charity having but recently come into operation, the Expenditure is limited to 500 *l*. a year by Her Majesty's Order in Council of 4th February 1875.

Surplus.— }  
 } These Grants were only partially awarded during the year.  
 Surplus.— }

Deficit.—Increase of salary of Superintendent, and payment to Cashier of salary from date of joining prior to commencement of financial year, and lodging allowance while official residence was under repair.

Deficit.—Due to increased consumption of gas in lighting the new Gymnasium and the Trafalgar Quarters.

Account of the Sum Expended, compared with the Sum Granted, for Greenwich Hospital and School, in the Year

SERVICE.	GRANT.	EXPENDITURE.	Expenditure compared with Grant.			
			Less than Granted.		More than Granted.	
	£. s. d.	£. s. d.	£. s. d.		£. s. d.	
Brought forward - - -	118,106 - -	116,904 12 10	4,266 10 8		3,065 3	
GREENWICH HOSPITAL SCHOOL— <i>continued.</i>						
T.—Contingencies - - - Greenwich School -	1,075 - -	1,134 16 11	- -		59 16 1	
U.—Wages - - - - - ditto -	3,275 - -	3,203 11 9	71 8 3		- -	
UU.—Washing and Expenses } of Laundry - - }	570 - -	487 16 7	82 3 5		- -	
V.—Repairs and Maintenance } of Buildings - - }	1,892 - -	1,908 18 5	- -		16 18	
VV.—Gymnasium - - - - - ditto -	190 - -	197 5 4	- -		7 5	
WW.—Roof to Bathing Pond - - ditto -	300 - -	358 16 -	- -		58 16	
X.—Latrines for Boys - - - - ditto -	1,000 - -	949 - -	51 - -		- -	
XX.—Additions and Alterations to } School Buildings - - }	5,000 - -	6,127 14 1	- -		1,127 14	
XXX.—Provisions, Clothing, Bed- } ding, and Stores - - }	12,742 - -	10,129 - 8	2,612 19 4		- -	
Y.—Medicines and Surgical } Instruments - - }	100 - -	107 6 5	- -		7 6	
Z.—Superannuation Allowances - ditto -	1,791 - -	1,800 7 8	- -		9 7	
£.	146,041 - -	143,309 6 8	7,084 1 8		4,352 8	
Abate.—Contribution from Naval Fund - -	953 - -	860 5 -	92 15 -		- -	
£.	145,088 - -	142,449 1 8	6,991 6 8		4,352 8	
	142,449 1 8		4,352 8 4			
NET SURPLUS - - - £.	2,638 18 4		2,638 18 4			

ended 31 March 1876, showing the Surplus or Deficit upon each Sub-Head of the Vote—*continued*.

EXPLANATION OF THE CAUSES OF VARIATION BETWEEN EXPENDITURE AND GRANT.

Deficit.—Travelling expenses of superintendent on duty ; increased number of pupil teachers, and consequent larger payment of monitorial allowances.

Surplus.—Less required for uniforms of staff of servants.

Surplus.—Less required for stores than anticipated, the number of boys not having been increased to the extent provided for, the new buildings not being ready.

Deficit.—	} These are merely the differences between estimated and actual expenditure.
Deficit.—	

Deficit.—Arising from the necessity for providing dressing-room accommodation not included in the contract.

Surplus.—The expense of the work having been less than anticipated.

Deficit.—Greater progress having been made in the execution of the work than anticipated when the Estimate was framed.

Surplus.—The number of boys not having been increased to the extent provided for, there not being sufficient accommodation, pending the completion of the new buildings.

Deficit.—More medicines and medical comforts required, owing to the outbreak of an epidemic.

Deficit.—Arising from the arrears of a pension for the previous year having become payable, and from variations in mode of payment.

Deficit.—Fewer pupil teachers sent from training ships than anticipated.

REPORT of the Comptroller and Auditor General upon the APPROPRIATION ACCOUNT of the RECEIPT and EXPENDITURE of the GRANT for GREENWICH HOSPITAL and SCHOOL, for the Year ended 31st March 1876; prepared and submitted for the Information of the House of Commons, in pursuance of the 22nd and 32nd Sections of the Act 29 & 30 Vict. c. 39.

Account examined like that of the Vote for Naval Services.

1. IN pursuance of the 48th section of the Act 28 & 29 Vict. c. 89, the accounts of the expenditure of the money granted by Parliament for this Service are audited and allowed, in the same manner as the accounts of money voted and expended for Naval Services.

Expenditure repayable from income of Greenwich Hospital.

2. The expenditure out of this Vote is repayable to the Consolidated Fund, from the income of Greenwich Hospital. The amount expended in the year 1874-75 has been repaid to the Exchequer.

Deficit on Grant, 1874-75, voted.

3. The Deficit on the Grant for the year 1874-75, viz., 3,718 *l.* 18 *s.* 11 *d.* (as should have been stated on the Account), has been voted by Parliament.

New-Sub-head.

4. A new Sub-head has been introduced into the Account, which was not included in the Estimate laid before Parliament, namely, "Special Pensions to Warrant Officers."

Payments in excess of Estimates on Sub-heads.

5. Payments have been made in excess of the Estimates, under various Sub-heads, amounting in the aggregate to 4,352 *l.* 8 *s.* 4 *d.*

Net Surplus.

6. The Net Surplus to be surrendered is, as shown by the Account, 2,638 *l.* 18 *s.* 4 *d.*

	£.	s.	d.
Grant - - - - -	145,088	-	-
Expenditure - - - - -	142,449	1	8
Net Surplus - - - - -	£. 2,638	18	4

*Wm. Dunbar,*  
Comptroller General of the Receipt and Issue  
of Her Majesty's Exchequer, and  
Auditor General of Public Accounts.

Exchequer and Audit Department,  
15 January 1877.





GREENWICH HOSPITAL AND SCHOOL.

APPROPRIATION ACCOUNT,

1875-76.

APPROPRIATION ACCOUNT of the Sum

Granted by Parliament for GREENWICH HOSPITAL and SCHOOL for the Year ended 31st March 1876, together with the Report of the Comptroller and Auditor General thereon.

(Presented pursuant to Act 29 & 30 Vict. c. 39, s. 22.)

Ordered, by The House of Commons, to be Printed,  
13 February 1877.

17.

Under 1 oz.

NAVAL CADETS ("BRITANNIA").

469

RETURN to an Order of the Honourable The House of Commons,  
dated 12 March 1877 ;—for,

TURN "of the Total Number of NAVAL CADETS who have been Trained on Board H.M.S. 'BRITANNIA' since that Ship has been stationed at *Dartmouth*, up to the 1st day of January 1877, specifying during that Period, the Total Number of Officers so Trained, with their present Rank now in the Naval Service; the Total Number who have Died; the Total Number who have been Killed; the Total Number who have been Invalided; the Total Number who have Resigned the Service; the Total Number who have Left, been Discharged, or Dismissed, stating the Cause; the Total Number who have been unable to pass their Examinations, and the Total Number on the Sick List each Year."

Admiralty, }  
5 April 1877. }

THOS. WOLLEY,  
Chief Clerk.

TURN of the Total Number of NAVAL CADETS who have been Trained on Board H.M.S. 'BRITANNIA' since that Ship has been stationed at *Dartmouth*, up to the 1st day of January 1877, &c.

Total Number Trained on Board "Britannia" 1st January 1864 1st January 1877.	Present Rank of those remaining in Service on 1st January 1877.						Total Number who have Died.	Total Number Killed, including Deaths by Drowning.	Retired or Discharged as Physically Unfit.	Discharges.			
	Lieutenants.	Retired Lieu- tenants.	Sub-Lieutenants and Acting Sub- Lieutenants.	Retired Sub- Lieutenants.	Midshipmen.	Cadets.				Resigned.	Dismissed.	Failed for Lieu- tenant.	Failed in "Britannia."
1,337	274	11	293	39	211	173	38	16	110	36	63	25	48

TOTAL NUMBER of CASES on the SICK LIST each Year.

Year.					Cases.	Year.					Cases.
1864	-	-	-	-	415	1871	-	-	-	-	118
1865	-	-	-	-	405	1872	-	-	-	-	25*
1866	-	-	-	-	254	1873	-	-	-	-	25*
1867	-	-	-	-	246	1874	-	-	-	-	50
1868	-	-	-	-	121	1875	-	-	-	-	175
1869	-	-	-	-	169	1876	-	-	-	-	132
1870	-	-	-	-	257						

\* The medical Returns received from the "Britannia" in 1872 and 1873 are unreliable.

Note.—The "Britannia" being only stationed at *Dartmouth* for a very short portion of the year 1863, this Return been taken from the 1st January 1864.

NAVAL CADETS ("BRITANNIA").

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RETURN of the Total Number of NAVAL  
CADETS who have been Trained on Board  
H.M.S. "BRITANNIA" since that Ship has  
been stationed at *Dartmouth*, up to the 1st day  
of January 1877; &c.

(*Captain Pm.*)

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*Ordered, by The House of Commons, to be Printed,*  
*6 April 1877.*

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HER MAJESTY'S SHIP "BRITANNIA."

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RETURN to an Order of the Honourable The House of Commons,  
dated 19 April 1877;—for,

COPY "of CORRESPONDENCE between the Admiralty and Mr. Penry Lloyd,  
relating to the recent INQUIRY on Board the 'BRITANNIA.'"

Admiralty, }  
7 May 1877. }

THOS. WOLLEY,  
Chief Clerk.

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REPORT on Mr. J. E. Lloyd, Naval Cadet.

Sir,

H.M.S. "Britannia," Dartmouth,  
16 December 1876.

I BEG to inform you that the principal Naval Instructor reports on your son as follows:—

"Mr. Lloyd is a most unsatisfactory cadet; his conduct and attention in study are markedly bad. He is idle and troublesome. At the same time he has very slight or no ability, and is worthless, and unfit to be an officer."

You must therefore, I regret to say, be prepared to withdraw him at the end of this term, contingent on coming examination.

Penry Lloyd, Esq.,  
Glanhenwye, Glasbury, R. S. O.

I have, &c.  
(signed) W. Graham, Captain.

---

Mr. Penry Lloyd to Captain Graham.

Sir,

Glanhenwye, Glasbury, R. S. O., Radnorshire,  
30 December 1876.

REFERRING to your report on Mr. J. E. Lloyd, Naval Cadet, dated 16th instant, I have the honour to inform you that I wish to withdraw him from Her Majesty's Ship "Britannia," contingent on an inquiry, which I hereby demand, into the systematic bullying and cruelty practised by the 3rd and 4th term cadets towards their juniors.

I further beg to state that among other cases I base my demand for an inquiry on the three following acts of bullying and cruelty committed on my son, the said J. E. Lloyd:—

1. That on one occasion he was compelled by a cadet named — to sing in the mess-room, contrary to the rules of the service, and thereby incurred punishment for breach of discipline.

2. That a cadet named — constantly ill-treated him, and on one occasion kicked him, knocked him down without any provocation, and rendered him for the day totally unfit to attend to his studies.

3. That on more than one occasion he has been compelled to give up his weekly allowance of pocket-money, under threats of personal chastisement.

I further generally charge cadets named —, —, and — with constantly and deliberately cruelly ill-treating my son, and thereby rendering him

him incapable of giving that attention to his studies which he otherwise would have done, and that his fear of being beaten by these cadets was greater than his fear of punishment by the authorities of the ship; as a consequence of which, acts of misconduct were committed by him to prevent his being sent to the bowling-alley, where he was in fear of being cruelly beaten.

That considering these circumstances, he had not the opportunity of attaining, in the short space of three months, sufficient knowledge to enable him to pass the high standard required by the Naval Instructor.

Waiting your reply, and reserving the right of publishing the correspondence if necessary,

I have, &c.  
(signed) *Penry Lloyd.*

Captain Graham, H.M.S. "Britannia."

*Captain Graham to Mr. Penry Lloyd.*

8, Park-place, Cheltenham,  
5 January 1877.

Sir,

THE charges preferred by you against cadets —, —, and — will be investigated by me, assisted by the senior officers of the ship, immediately the cadets return to the "Britannia," on the 26th instant.

I have to request you will bring forward all the evidence you can command for the prosecution of these young officers.

I regret that your son is unable to come into court with clean hands, but the fact of his most deliberate falsehood to me, and that these charges were unheard of until (for misbehaviour which could not have been induced by senior cadets) he was deemed unfit for the service, renders it impossible to accept anything your son states without proof.

Your son cannot be withdrawn from Her Majesty's service until the whole of this matter is sifted; and it is my duty to inform you that a boy convicted of a deliberate falsehood, whether the lie proceed from cowardice or otherwise, is liable to dismissal from Her Majesty's service with disgrace.

I am, &c.  
(signed) *W. Graham, Captain.*

Penry Lloyd, Esq.

*Mr. Penry Lloyd to Captain Graham.*

Maesllwich Estate Office, Glasbury, R. S. O.,  
8 January 1877.

Sir,

I BEG to acknowledge receipt of your letter, dated 5th instant, in which you state that the charges preferred by me against cadets —, —, and — will be investigated immediately the cadets return to the "Britannia," on the 25th instant.

You further state that my son will not be believed unless corroborated by other evidence, on the grounds that he denied that his weekly allowance of pocket-money had been taken from him.

In order that I may be able to obtain further evidence, I have to request that you will furnish me with names and addresses of the parents of the following cadets, namely, Whitla, Hawke, Plenderleath, Boys, Limpus, Wake, Cockburn, Petre. By assuming the fact that my son told you a deliberate falsehood, you indirectly admit that the charge of his money being taken is true. There is no doubt whatever that it is true, and that many more cadets gave you the same answer under exactly similar circumstances. You further charge my son with "misbehaviour which could not have been induced by senior cadets." I beg, therefore, to request that you will furnish me with a statement of the nature of this misbehaviour which has caused you in so short a time to consider him "unfit for the service."

Captain *Graham* to Mr. *Penry Lloyd*.

Sir, Pewer, Abingdon, 10 January 1877.

IN accordance with your request, the addresses of the parents of boys named in your letter 8th January will be forwarded to you.

With regard to the third paragraph of your letter, you are quite incorrect in assuming that I admit the truth of your son's story; he made a statement to me which is directly contradictory to what you say he stated to you, therefore it matters not to whom he told the falsehood, his character for truthfulness is equally affected. Your request for a statement for the nature of the behaviour which has caused me to consider him unfit for the service will be afforded you, if you like to come to Dartmouth and inspect the defaulters' books, but I decline to discuss with any parent my reasons for coming to the conclusion that his boy is unfit for the service.

I am, &c.

(signed) *W. Graham*, Captain.

P.S.—I shall be moving about until the end of my leave; you had better address any letters to the ship.

*W. G.*

Mr. *Penry Lloyd* to the Right Honourable *G. Ward Hunt*, M.P.

Self in the Prosecution of certain Cadets on H.M.S. "Britannia," for Cruelty and Bullying.

Glasbury, R. S. O., Radnorshire,  
25 January 1877.

My Lord,

I BELIEVE the facts of the above case have been placed before your Lordship by the Honourable A. Walsh, M.P., and I beg respectfully to request that you will order that the evidence in the case shall be taken on oath, as in no other way will it be possible for me to induce the witnesses to speak the whole truth, their dread of the consequences being insuperable.

I am, &c.

The Right Honourable  
*G. Ward Hunt*.

(signed) *Penry Lloyd*.

The Secretary of the Admiralty to Mr. *Penry Lloyd*.

Sir,

Admiralty, 26 January 1877.

I AM commanded by my Lords Commissioners of the Admiralty to acknowledge the receipt of your letter of the 25th instant, having reference to the inquiry into the case of your son, Mr. J. E. Lloyd, Naval Cadet of the "Britannia," and I am to acquaint you in reply that my Lords have no power to order evidence to be taken on oath in such an inquiry.

I am, &c.

*Penry Lloyd*, Esq.,  
Glasbury, R. S. O., Radnorshire.

(signed) *Robert Hall*.

Mr. *Penry Lloyd* to the Right Honourable *G. Ward Hunt*, M.P.

Glasbury, R. S. O., Radnorshire,  
25 January 1877.

My Lord,

I APPLIED to Captain *Graham* to allow my son an extension of leave, from the 27th to the 29th instant, so that I might accompany him to Dartmouth on the latter date.



Captain Graham has refused my application, and I beg to request that you will grant the leave asked for.

For obvious reasons it would be undesirable that my son should have any intercourse with the cadets previous to the inquiry to be held on the 30th instant.

A reply by telegraph, addressed to me at Hay, Breconshire, would reach me in time to prevent my son starting on Saturday morning.

The Right Honourable  
G. Ward Hunt.

I remain, &c.  
(signed) *Penry Lloyd.*

TELEGRAPH.

Penry Lloyd, Esq., Hay, Breconshire.

LEAVE is granted to Mr. Lloyd until morning of the 30th instant.

Message repeated to Glasbury, R. S. O., Radnorshire.

Sent 12.7 p.m., 26th January 1877.

TELEGRAPH.

Captain, "Britannia," Dartmouth.

LEAVE is to be given to Cadet J. E. Lloyd until morning of the 30th instant.

Sent 12.50 p.m., 26th January 1877.

Secretary of the Admiralty to Mr. *Penry Lloyd.*

Sir,

Admiralty, 26 January 1877.

IN reply to your letter of the 20th instant, and in confirmation of my telegram to you of this date, both to Hay and to Glasbury, I am commanded by my Lords Commissioners of the Admiralty to acquaint you that the Captain of the "Britannia" has been directed to give your son, Mr. J. E. Lloyd, Naval Cadet, leave until the morning of the 30th instant.

Penry Lloyd, Esq.,  
Glasbury, R. S. O., Radnorshire.

I am &c.  
(signed) *Robert Hall.*

Secretary of the Admiralty to Mr. *Penry Lloyd.*

Sir,

Admiralty, 12 February 1877.

MY Lords Commissioners of the Admiralty have received the report of the inquiry into the case of alleged bullying of your son, Mr. J. E. Lloyd, on board the "Britannia," and my Lords direct me to acquaint you that the result of the investigation is, that their Lordships consider the charges made by you have not been substantiated as regards any important point.

Penry Lloyd, Esq.,  
Glasbury, R. S. O., Radnorshire.

I am, &c.  
(signed) *Vernon Lushington.*



Mr. *Penry Lloyd* to the Right Honourable *G. Ward Hunt*, M.P.

"*Britannia*" Inquiry.

Glasbury, R. S. O., Radnorshire,  
14 February 1877.

My Lord,

I BEG to acknowledge receipt of a letter from the Lords Commissioners of the Admiralty, dated 12th instant, and signed "Vernon Lushington," informing me "that their Lordships consider the charges made by me have not been substantiated as regards any important point."

As this result of the investigation appears to me so much at variance with the evidence, full notes of which are in my possession, I beg respectfully to request that you will favour me with a copy of the report of Rear Admiral Willes, and also inform me whether a copy of the evidence has been submitted to your Lordships.

The Right Honourable *G. Ward Hunt*,  
First Lord of the Admiralty.

I am, &c.  
(signed) *Penry Lloyd*.

Captain *Graham* to Mr. *Penry Lloyd*.

Withdrawal of Mr. *Lloyd*.

H. M. S. "*Britannia*," Dartmouth,  
15 February 1877.

Sir,

In compliance with their Lordships' letter of the 12th instant, I have to request you will withdraw your son, Mr. J. E. *Lloyd*, naval cadet, from Her Majesty's ship "*Britannia*."

I have, &c.  
(signed) *W. Graham*,  
Captain.

*Penry Lloyd*, Esq., Glasbury.

Mr. *Penry Lloyd* to Captain *Graham*.

Glasbury, R. S. O., Radnorshire,  
17 February 1877.

Sir,

I HAVE received your letter notifying the withdrawal of my son, Mr. J. E. *Lloyd*, from Her Majesty's ship "*Britannia*," and I have to request that you will forward his sea-chest and other effects to the above address.

I take the opportunity of informing you that the attention of Parliament will be called at an early date to the facts of this case, and the public will have an opportunity of forming an opinion of the justice and discipline maintained by the Naval authorities.

I have, &c.  
(signed) *Penry Lloyd*.

Captain *Graham*.

Mr. *Penry Lloyd* to the Right Honourable *G. Ward Hunt*, M.P.

"*Britannia*" Inquiry.

Glasbury, R. S. O., Radnorshire,  
20 February 1877.

My Lord,

I BEG most respectfully to request your attention to my letter of the 14th instant.

I enclose herewith, for your information, copy of my notes of the evidence taken at the inquiry, the accuracy of which I can vouch for.

Captain *Graham*, by endorsing the opinion of a naval instructor, has branded my son as "worthless, and unfit for Her Majesty's service," and compelled me

to withdraw him, thereby forfeiting a nomination, and the heavy expense consequent thereon.

Not a word has been said in any way affecting my son's character, and he has been admitted to be physically fit for the Navy; for mere inattention to his studies during the short space of three months, he is designated as "worthless."

I appeal to you, as Secretary of State for the Navy, to redress this injustice. I ask you to retract the harsh and unwarrantable epithets, or at all events to give me an opportunity before an impartial tribunal, and with the privileges of cross-examination and evidence taken on oath, to disprove the aspersion cast upon the character of my eldest son.

I await your reply with deep anxiety.

The Right Honourable  
G. Ward Hunt.

I am, &c.

(signed) *Penry Lloyd.*

Secretary of the Admiralty to Mr. *Penry Lloyd.*

Sir,

Admiralty, 23 February 1877.

I HAVE laid before my Lords Commissioners of the Admiralty your letters of the 14th and 20th instant, requesting that you may be furnished with a copy of the Report of the Court of Inquiry recently held on board Her Majesty's ship "Britannia," if it has been submitted to their Lordships, and enclosing a copy of the notes of the evidence taken by you on that occasion.

2. I am commanded by their Lordships to acquaint you in reply, that a copy of the evidence was forwarded by Admiral Willes, the president of the court, to their Lordships, but that it is a rule not to make public Reports of Courts of Inquiry, and that they are therefore unable to furnish you with a copy.

3. With regard to the complaint made in your letter of the 20th, that the epithet "worthless" had been applied to your son by Captain Graham, their Lordships are of opinion that this epithet should not have been applied, and the captain of the "Britannia" has been so informed.

I am, &c.

Penry Lloyd, Esq.,  
Glasbury, R. S. O., Radnorshire.

(signed) *Robert Hall.*

Mr. *Penry Lloyd* to the Right Honourable *G. Ward Hunt*, M.P.

"Britannia" Inquiry.

Glasbury, R. S. O., Radnorshire,  
24 February 1877.

My Lord,

I BEG to thank you for your letter of the 21st instant, informing me that you condemn the use of the word "worthless" as applied by Captain Graham to my son.

I regret, however, that I cannot rest satisfied with this instalment of justice; my son has been compulsorily withdrawn contrary to the regulation which provides that a cadet who fails in an examination will be warned that unless he improves he will be withdrawn at the *end of the next term*.

My son has not been proved "unfit" for the service, on the contrary, his physical qualifications are described as very good and his conduct fair; he only failed in his study; this failure was caused by cruelty and bullying, which has been conclusively proved.

I regret, therefore, that I cannot rest satisfied without full satisfaction, or the following compromise:—

1. That the Admiralty Order directing the withdrawal of my son shall be cancelled.

2. That in lieu of the nomination I have been unjustly deprived of, the Admiralty shall secure me a nomination for one of my other six sons, the date and selection to be left to my option.

To

To prove the unfairness of my case, I need merely call to your mind the instance of two cadets named —— and ——, who were flogged for dishonesty, and are now on board, also the case of ——, a known bad character, and who had struck his instructor in the face with his fist, who is also now on board.

The Right Hon. G. Ward Hunt. I remain, &c.  
(signed) Penry Lloyd.

Secretary of the Admiralty to Mr. Penry Lloyd.

Sir, Admiralty, 5 March 1877.

My Lords Commissioners of the Admiralty have received your letter of the 24th ultimo, addressed to Mr. Ward Hunt, in which you take exception to the removal of your son from Her Majesty's ship "Britannia," and request, either that the order for his withdrawal may be cancelled, or that a nomination for a cadetship may be given to another of your sons.

2. With regard to the removal of your son from the service, I am directed to refer you to paragraphs 13 and 15 of the regulations respecting naval cadets, which are as follows:—

"13. Any cadet who shall have been specially reported to their Lordships as for any reason unfit for the service will be removed from the Navy."

"15. The parent or guardian of every cadet will be required to provide outfit as under the regulations in force hitherto, and to sign a declaration (on the admission of the cadet to the 'Britannia') to the effect that he shall be immediately withdrawn on the receipt of an official intimation of his being considered unfit for the Royal Navy."

3. My Lords desire me to remind you that the declaration referred to in the above paragraph, was signed by you on the admission of your son into the "Britannia," and I am to add that they are unable to comply with your request to cancel the order directing his withdrawal.

4. My Lords are also unable to promise you a nomination for another of your sons, but they would observe that they consider the wish, expressed in your letter, to have a son educated on board the "Britannia," a proof that you are not dissatisfied with the state of things on board that ship.

5. With reference to the last paragraph of your letter, their Lordships direct me to inform you that they must decline to discuss with you the misconduct of other cadets under training in the "Britannia."

Penry Lloyd, Esq., I am, &c.  
Glasbury, Radnorshire. (signed) Robert Hall.

Mr. Penry Lloyd to the Lords Commissioners of the Admiralty.

My Lords, Glanhenwy, Glasbury, R. S. O.,  
26 February 1877.

I HAVE the honour to acknowledge the receipt of your letter of the 23rd instant, informing me that you consider the epithet "worthless" should not have been applied to my son by Captain Graham, but declining to furnish me with a copy of the report of Admiral Willes, on the ground that it is a rule not to make public the reports of Courts of Inquiry.

By the recall of the unwarrantable epithet referred to, I have to thank you for an instalment of justice, but with which I cannot be content.

I trust, after a perusal of this letter, your sense of justice will lead you to reconsider and alter the decision arrived at, and announced to me in your letter of the 12th February, in which you stated that "the charges preferred by me had not been substantiated in any important point;" and also to annul the



order conveyed to me through Captain Graham on the 15th February to withdraw my son from Her Majesty's ship "Britannia."

As soon as I became aware of the practices of bullying and cruelty on board the ship, and exercised against my son, I resolved to request from Captain Graham an inquiry into the subject. This request he granted; but subsequently, in the correspondence that passed, I found that, more or less, the officers of the ship might consider themselves responsible for what had occurred, and could not form a fitting tribunal to hold an inquiry into matters directly or indirectly affecting their conduct.

I therefore applied to your Lordships for an Admiralty inquiry, and this which you were good enough to grant I had reason to believe from your previous knowledge of bullying practices on board the "Britannia," and from the high and independent position you hold, would be as fair and as searching as any inquiry could possibly be.

When I received intimation from the First Lord that my request was granted, I was desired to attend at Dartmouth "to substantiate the charges made by me."

I do not say the inquiry was unfairly conducted by Admiral Willes, as probably he acted according to the rules of the service, but I am of opinion that when he found the rule of the ship's cadets was to tell deliberate falsehoods to screen their seniors, he should have relaxed those rules of the service, seeing as he must have the urgent necessity of examining the cadets on oath and subjecting them to cross-examination.

At any rate, the mode of conducting the inquiry was unfair to me. I had been called upon to substantiate the charges made, but was not allowed the privilege which I claimed of examining and cross-examining the witnesses. It is true I was allowed to put questions through the President, but such a mode of questioning witnesses who either tell falsehoods, or prevaricate, is found by every civil court in the kingdom to be altogether futile.

I can particularly call to mind the demeanour of certain witnesses, whom I asked the President to examine early in the inquiry to corroborate some details of my son's statement, which plainly condemned the truth of the words of contradiction they were uttering. I prefer not to mention names, but I am quite confident, had these witnesses been examined on oath, or even cross-examined, their statements would have been very different. For similar reasons the inquiry was not of that searching nature which I had been induced to hope it would have assumed when ordered by your Lordships, and on which I had relied.

However, apart from the admitted failure of the direct corroborative evidence (a failure explained by the rule of falsehood prevalent among the cadets), I contend, and in this opinion I am supported by that of many persons of high position and character who have read the evidence, that, on the evidence as it stands, there is more than sufficient corroborative evidence to prove the truth of my son's statement, and to substantiate the charges made. I beg to refer more particularly to the evidence of—

Lieutenant Wilson,  
Corporal Wilcox.

	{	Graham,
		Lyne,
		Tillard,
Captains of Cadets		Somerset,
		Barber,
		Lyon,
	Martin.	

	{	Thomas,
Third and Fourth Term Cadets		Battiscombe.

These officers and senior cadets proved :—

" That there was bullying last term ;

" That Lloyd, with two other cadets, was singled out for bullying ;

" That one of the cadets charged was a ' bully,' and that he did touch Lloyd ;

" That



"That money was taken, and according to a report at the time, from Lloyd (*see* Martin's evidence);

"That 'togies' were used to beat the juniors with;

"That cadets were sent by their seniors to steal chesnuts."

In fact, everything and every single circumstance stated by my son was proved to have occurred to somebody or other, and to have been more or less the practice. Surely the conviction must be forced upon even the most unwilling mind, that such were the practices that were in operation towards my son, and by the cadets charged. In any other court in the world this circumstantially corroborative evidence would be received as conclusive, though the direct corroborative evidence failed, on account of the want of a more searching inquiry, and of the moral cowardice of the witnesses. I venture to say that if the evidence in this case was submitted to any independent tribunal, your decision of the 12th February could not be sustained.

And allow me to point out that your Lordships are in this dilemma: either the boy's (my son's) statement is true, or it is false. If true, you cannot maintain your present decision; if false, even in any case, but especially where such important interest and the character of so many cadets are concerned, you should call him to account for it, and, if proved, dismiss him from the service with disgrace. The result cannot be left in this undecided state. As to the general charges against and as affecting the ship, of oppression of the junior by the senior cadets, of a system of terrorism, leading to the establishment of falsehood and "thieves' honour" among the cadets, of bullying, fagging to steal, and even stealing by the seniors from the juniors, these are, to the great shame of the service, proved on all important points, and must be so to the mind of your Lordships and of Admiral Willes; and however painful to you it may be to find and acknowledge such a state of things to exist, it is to be hoped that no want of moral courage will induce your Lordships to deal lightly with these great abuses.

If I have succeeded in bringing home to your Lordships' mind the real state of things existing on board that training ship, I shall feel in a measure compensated even though my son's prospects and character have fallen, at your hands, the sacrifice.

I again repeat the request to be furnished with a copy of Admiral Willes' report, and respectfully request your Lordships to reconsider your decision of the 12th February as being at variance with the evidence, and, in any case, incomplete and unsatisfactory.

The Lords Commissioners  
of the Admiralty.

I have, &c.  
(signed) *Penry Lloyd.*

---

Secretary of the Admiralty to Mr. *Penry Lloyd.*

Sir,

Admiralty, 5 March 1877.

I HAVE laid before my Lords Commissioners of the Admiralty your letter of the 26th ultimo, relative to the case of your son, late a naval cadet on board Her Majesty's ship "Britannia," and I am directed by their Lordships to inform you, in reply, that the decision contained in my letter of the 12th ultimo was arrived at after full consideration, and that they cannot consent to reconsider the question.

2. For reasons, which have been already given, my Lords must also again decline to furnish you with a copy of Admiral Willes' report of the inquiry held on board the "Britannia."

*Penry Lloyd, Esq.,*  
Glanhenwy, Glasbury, Radnorshire.

I am, &c.  
(signed) *Robert Hall.*

Mr. *Penry Lloyd* to the Lords Commissioners of the Admiralty.

Glanhenwye, Glasbury, R. S. O.,

12 March 1877.

My Lords,

I HAVE to acknowledge the receipt of your letter of the 5th instant.

With reference to paragraph 2, I am quite aware that the regulations referred authorise you to remove any cadet from the Navy who is specially reported to you as "unfit for the service."

There are doubtless various causes of such unfitness, but surely inattention to study for two or three months on first joining, even if not otherwise accounted for, cannot be justly deemed such a cause on the part of a cadet described as "a strong active boy," "quiet and not troublesome," and as "having ability."

Those on board the "*Britannia*" who reported him to you as "unfit for the service," as unjustifiably erred as they did, according to your own admission, in reporting him as "worthless."

But this inattention can be and has been accounted for! The boy, from the very day he joined, was regularly beaten with fists and "togies," and not only bullied, but singled out for bullying by the senior term cadets, just as —s' son was. And here I put to your Lordships the question, on which the whole case really hinges, Was he bullied or was he not? You may decline to answer the question, but there is only one true answer that can be given. Assuming as I do that he was cruelly ill-treated—and the contrary you have not ventured to state—what remains is the value of the charge of inattention to studies, and, resting solely on that, of the justice of his condemnation as "unfit"? Your decision, ordering his removal from the Navy, possessed as you now are of a knowledge of the cruel treatment he received, and of the state of things on board the "*Britannia*," is an act of injustice that ought not to be committed with impunity.

With reference to paragraph 4, I would observe that I have always held in high estimation, from national feeling, the service of the British Navy, whatever I may think of individual officers and their actions, and would still wish one of my sons to join it; but in asking for another nomination I fully reckoned, and still reckon, that as the direct result of this inquiry, notwithstanding your adverse decision to my son, you will and must make a very great change in the system of education on board that ship, and very probably supersede it with a college.

I have not been allowed to see the report of Admiral Willes; but of this I feel convinced, that it must contain as severe a condemnation of the present state of things as it is possible to frame; and I am assured that a change for the better has already been inaugurated.

Your remark, to the effect that the application for another nomination gives contradiction to my statement that I am dissatisfied with the state of things on board the "*Britannia*," I think you will, on reflection, regret having made, as unworthy of your high position, and nothing more than a specious argument.

I have, &c.

The Lords Commissioners of the Admiralty. (signed) *Penry Lloyd*.

Admiralty.

Secretary of the Admiralty to Mr. *Penry Lloyd*.

Sir,

Admiralty, 17 March 1877.

I AM commanded by my Lords Commissioners of the Admiralty to acknowledge the receipt of your letter of the 12th instant, relative to the removal from Her Majesty's training ship "*Britannia*" of your son, a naval cadet.

I am, &c.

(signed) *Robert Hall*.

*Penry Lloyd*, Esq.,  
Glanhenwye, Glasbury.

Mr. *Penry Lloyd* to the Lords Commissioners of the Admiralty.

Glanhenwye, Glasbury, R. S. O., Radnorshire,  
4 April 1877.

My Lords,

I HAVE delayed replying to your letter of the 6th ultimo, in which you inform me you decline to reconsider your decision, contained in your letter of the 12th February, and also to furnish me with a copy of Admiral Willes' report, in the hopes that I should, ere this, have received a communication from your Lordships in answer to an application made on my behalf by the Lord Lieutenant of this county to the First Lord.

2. Not having received any reply, I have only now to remark, that as I am convinced the decision referred to is at direct variance with the evidence, and as you withhold the report upon which that decision may be assumed to be based, I feel most unjustly treated by your Lordships, and have no other alternative than to use every means in my power to obtain that justice which is due, but I have failed to receive at your hands.

3. How your Lordships can reconcile the compulsory withdrawal of my son, after only three months' experience, for inattention to study, with the favour you have just granted to 27 fourth term cadets, by allowing them an extra term in consequence of their backwardness in study, I leave to your Lordships to determine.

4. I take this opportunity of calling your Lordships' attention to a letter from Captain Graham, marked No. 2, in the Appendix to the enclosed Minutes, in which he states that "your son has already been warned," and, "according to the Regulations, if a boy fails in an examination after having been warned, he is dismissed." A reference to the Regulations will convince you that this is irregular; it is there stated, that "a cadet who fails in an examination at the end of his *first term* will be warned that he will be dismissed at the end of the *next term* unless he improves."

5. I beg to request that you will order that the letters and papers put in by me at the late inquiry be returned to me.

The Lords Commissioners  
of the Admiralty.

I have, &c.  
(signed) *Penry Lloyd*.

Secretary of the Admiralty to Mr. *Penry Lloyd*.

Sir,

Admiralty, 17 April 1877.

I HAVE laid before my Lords Commissioners of the Admiralty your letter of the 4th instant, on the subject of the decision arrived at in regard to the case of your son, late a naval cadet on board Her Majesty's ship "Britannia."

2. With reference to the request contained in the last paragraph of the above letter, I am commanded by their Lordships to return herewith the letters and papers put in by you at the late inquiry into your son's case.

*Penry Lloyd, Esq., Glenhenwye.*

I am, &c.  
(signed) *Robert Hall.*



HER MAJESTY'S SHIP "BRITANNIA."

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COPY of CORRESPONDENCE between the Admiralty  
and Mr. *Perry Lloyd* relating to the recent IN-  
QUIRY on Board the "BRITANNIA."

(*Mr. William Maitland,*)

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*Ordered, by The House of Commons, to be Printed,  
8 May 1877.*

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NAVAL CADETS ("BRITANNIA").

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RETURN to Two Orders of the Honourable The House of Commons,  
dated 16 March and 31 May 1877;—for,

(ORDER, 16 March 1877.)

RETURN "of any REPORTS made since January 1876 by the DIRECTOR of  
NAVAL STUDIES at *Greenwich* on the State of Proficiency of the CADETS of  
the 'BRITANNIA' appointed under the Revised System of Nomination  
without Competition."

(*Mr. Shaw Lefevre.*)

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(ORDER, 31 May 1877.)

COPY "of the REPORT of the CHIEF NAVAL INSTRUCTOR of the 'BRITANNIA'  
on the Newly-entered CADETS :"

"RETURN showing the PLACES obtained by NAVAL CADETS entered under  
Limited Competition when passing in and out of the 'BRITANNIA :'"

"And, RETURN showing the Number of CANDIDATES for NAVAL CADETSHIPS  
Nominated for the Examinations between June 1872 and November 1876  
(inclusive); the Number who went up for Examination; the Number  
Entered at each Examination; and the Total Entries for each Year."

(*Mr. Algernon Egerton.*)

Admiralty, }  
31 May 1877. }

THOS. WOLLEY,  
Chief Clerk.

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Ordered, by The House of Commons, to be Printed,  
31st May 1877.

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REPORTS made since January 1876 by the Director of Naval Studies at *Greenwich*, on the State of Proficiency of the CADETS of the "BRITANNIA," appointed under the Revised System of Nomination without Competition.

Vice Admiral *E. G. Fanshawe*, C.B., to the Secretary of the Admiralty.

Proposed Alterations in Examination of "Britannia" Cadets to remedy the Inconvenience arising from the Inequality in Length of Terms.

Royal Naval College, Greenwich,  
3 March 1876.

Sir,

I HAVE the honour to offer the following observations on the question of some alteration in the method of examination in the "Britannia," proposed as a remedy for inconvenience arising from the irregularity in the length of the school terms. It was stated in the conference at the Admiralty that owing to the unequal length of the two terms the cadets entered at the commencement of the short term cannot get the same number of marks at the examination as those entered at the commencement of the long one, and that this had an unfair effect, because boys were liable to be warned for dismissal who could not pass the examination at the end of their first term; also, that the batch entered in the last short term had failed to acquire the requisite knowledge to allow of their taking up the studies allotted to the next term.

The question is, what practical effect the difference has upon the well-doing of the cadets, either in their acquirements during their course in the "Britannia," or as regards fairness in dismissals.

The former effect must be inappreciable. Every cadet has two terms of each length; half of them do the first and third subjects of the general course in the short term, and the other half do the second and fourth subjects in the fourth term, and *vice versa*; and these minor differences have in fact no effect whatever in their passing out examination.

The latter effect (as to dismissal) is also inappreciable. The first term is (as stated by Captain Graham) never one of much progress, as the boys require time to settle down to their work under the new condition they are placed in; and one of the subjects of study, the first book of Euclid, is (except for the period between February 1875 and November 1876) a subject upon which they are required by their entrance examination to show some previous knowledge.

Accordingly, experience has shown that in every case those who have been warned for dismissal after their first term have been so backward that the length of the term could not at all affect the decision.

The fact that the last batch (unlike any other batch who have joined in August) have failed in their first term to acquire the knowledge necessary to enable them to proceed advantageously to the course prescribed for the second term is clearly exceptional, being due to their having been exempted from the acquisition of any knowledge of the first book of Euclid and of algebra before their entry, a cause now about to be removed, and therefore requiring no disturbance in the existing permanent Regulations.

I come now to the alterations in the system of examination proposed to obviate the above inconvenience, which, as I have explained, is, in my opinion, of too unimportant a character to justify departure from the general scheme of examination adopted for the cadets, even if this were (as I think it is not) the simplest and most direct remedy for the inconvenience.

I believe it is a generally recognised principle in educational examination that the teachers should not be the examiners when the object of the examination is to search into the efficiency of the teaching and the actual requirements and progress of the students, rather than to allot them their temporary places in their respective classes. This is certainly the object in the present examinations in the "Britannia," because they determine whether the cadets are or are not fit to enter upon the naval service.

It seems to me that it would be in a high degree objectionable to reduce the number of their examinations. The prolonged presence in the "Britannia" of those who are unfit would unduly occupy, or rather waste, the time of the instructors, and of the executive departments of the ship; and it would exclude from a chance of entering the Navy boys who are eager to join the service.

Again, I believe there is no doubt that a local examination compared with an outside examination means a lax examination, and that the substitution of a lax for a strict examination must tend to lower the level of acquirements gained in the "Britannia."

I think that this deterioration will probably consist more in deficiency of grounding than in deficiency of superficial knowledge; and taking into consideration the small means of keeping up and increasing, while a midshipman, the knowledge gained in the "Britannia," it is peculiarly necessary to aim at a thoroughly efficient foundation in the studies of a cadet.

I had written the above before referring to the Director of Studies; but I have since received from him the accompanying report:—

On conferring with him, and reading his report, I see additional reasons which confirm the opinion I have given; in the first place all examinations under the Director of Studies should cover the whole ground gone over by the cadets, so that in any case they must be subjected to examination on the whole course they go through in the "Britannia;" if this is done, as at present, in four instalments, corresponding to the four terms, the result, while equally efficacious, is much less trying to the cadets, and much more suited to their age than if they had to be examined in one searching examination in all the subjects of study of the whole preceding year. Also an important object of outer examinations, that of keeping the standard of instruction given up to the highest level by frequent reports to the Admiralty of the actual state of the school, will not be so effectually attained if the number of examinations be reduced.

It is, moreover, clearly true as pointed out by the Director of Studies, that the object for which this fundamental, and I submit disadvantageous, change is proposed, can be obtained with the greatest ease by the simplest possible modification; for instance, an important subject in the first term's study is the first book of Euclid. It is only necessary in order to remove every trace of difficulty that the cadets entered in July should do a fair portion (say 35 propositions) of the first book in the first term, and the remainder with the second book in the second term; and that those entered in January should do the whole of the first book in their first term, and the second book in the second term, the examinations being regulated accordingly.

For these reasons I am induced to submit for their Lordships' consideration that it would be better not to alter the system of examinations now established in the "Britannia."

I am, &c.

The Secretary of the Admiralty.

(signed) *E. G. Fanshawe*,  
Vice Admiral, President.



The Director of Studies to Vice Admiral *E. G. Fanshawe*, C.B.

Examinations in Her Majesty's Ship "Britannia."

Royal Naval College, Greenwich,

2 March 1876.

Sir,

I STATED yesterday, in our conference with the First Lord, Sir Alexander Milne, Admiral Hornby, and Captain Graham, that if the sole object of the examination of the cadets of Her Majesty's ship "Britannia" were to test their knowledge before entering the service as midshipmen, the final examination on leaving the "Britannia," as it is the important one, might suffice. I did not add, however, as I might have done, that such a final examination would necessarily have to be more searching and of a far more elaborate character than any now existing, since it would become necessary to have proof that the cadets had been sufficiently grounded in all subjects. To delegate the examination in the more elementary parts to the instructors of the cadets themselves would be contrary to the practice which now prevails in all similar institutions, and would be, in fact, a recurrence to a system which some years ago was tried in the "Britannia," but deliberately abandoned by their Lordships. Moreover, such a final examination would only imperfectly serve to keep their Lordships fully informed, by the testimony of impartial and independent authorities, of the condition and general character of the school.

What I have here stated as to the sufficiency, as well as the insufficiency, of one examination, applies in a modified degree to the proposed scheme of two examinations for each cadet. Such examinations would necessarily be heavier, and have to include more subjects than those now held at the end of the second and fourth terms, if the same securities for good training, as opposed to merely preparing for examination which now exist are to be maintained. And on the other hand, their Lordships' knowledge of what has actually been done during each term on board the "Britannia" would necessarily be less complete than at present.

A yearly examination of each cadet was proposed yesterday as a remedy for an inconvenience with which is only indirectly connected. I mean the acknowledged inconvenience of having a fixed programme of studies for each of the four terms, irrespective of the fluctuating duration of those terms. The fact appeared to have been overlooked by Captain Graham that the examinations should merely, as they in reality simply do, cover the ground of the studies. If the extent of each terminal examination is fixed, it is because the studies are fixed. It would unquestionably be an advantage to regulate the extent of the studies pursued during each term by the length of that term; and it is to me a matter of surprise that this has not been done before. Once so regulated, nothing would be simpler than to make the respective examinations co-extensive with the studies; and that done, the alleged inconvenience must cease to exist. Captain Graham urged yesterday, unless I misapprehended the purport of his observations, that it would be a pity to disturb the existing programme of studies, since it has been so recently and with such great labour organised. I am quite at a loss, however, to see how relief from the alleged inconvenience of long and short terms is to be found otherwise than by disturbing the existing programme of studies, so far as to adapt it to the length of the terms. Unless accompanied by some such adaptation, the yearly examination of each cadet will, of course, leave the grievance untouched.

I find I was correct in the statement I made yesterday, that the effects of the long and short terms on the final examination are scarcely, if at all, traceable in statistics. This effect being masked, and, indeed, almost obliterated, by more weighty circumstances, such as the variable ability of the cadets, and the greater or less capacity for teaching of the instructors under whose tuition each cadet remains throughout the entire period of his service in the "Britannia."

Although not traceable in statistics, however, there is no doubt that long and short terms give rise to many inconveniences. That these can be very simply remedied, and that the remedy does not necessarily involve altering the frequency of examinations is, I think, pretty clear. The only important question demanding their Lordships' decision appears to me to be this: Do

they at present possess more detailed knowledge through external examiners of the condition of educational matters on board the "Britannia" than they desire? If so, then the yearly examination of each cadet will probably suffice; such examinations, however, would have to be somewhat more searching, and therefore more trying than at present. It should, however, be distinctly borne in mind that the question of the remedy for the inconvenience of long and short terms is entirely distinct from the question of examination. The former can be remedied by suitably altering the programme of studies; the examinations must necessarily be adapted to suit this programme.

I am, &c.

(signed) *T. Archer Hirst,*

Vice Admiral E. G. Fanshawe, C.B.

Director of Studies.

REPORT by the Director of Studies of the Examination of Cadets passing out of  
"Britannia," July 1876-77.

Her Majesty's Ship "Britannia,"

Dartmouth, 18 July 1876.

Sir,

I HAVE the honour to transmit herewith the result of the examination of the cadets who are now passing out of the "Britannia," observing that, in accordance with the usual practice, I defer making my report in detail until I have completed the examination of the papers of the cadets of the other three forms. I may, however, state here, generally, that the result which I enclose is satisfactory, five cadets being entitled to first-class certificates, while none have failed. I should also observe that three (3) cadets who were in hospital were allowed to work their papers, but were unable to be examined orally. Their marks have, of course, suffered from this omission; but it is satisfactory to note that their class would not be altered, even if they were credited with the largest number of marks obtained by any cadet at the *vivâ voce* examination.

No. 457 obtained the total number of marks requisite for a first-class certificate, but failed to satisfy the conditions of a first-class by not obtaining 70 per cent. of the maximum number of marks allotted to the mathematical subjects.

I am, &c.

(signed) *T. Archer Hirst,*

Admiral Fanshawe, C.B.,  
&c. &c.

Director of Studies.

Royal Naval College, Greenwich,  
20 July 1876.

APPROVED and submitted for their Lordships' consideration.

*E. G. Fanshawe, Admiral,*  
President.

The Secretary of the Admiralty.

HER MAJESTY'S SHIP "BRITANNIA."—FINAL EXAMINATION OF CADETS.—  
July 1876.

Class.	Index Number.	Order of Merit.	Arithmetic.	Algebra.	Geometry.	Plane Trigonometry.	Spherical Trigonometry.	Practical Navigation.	Theoretical Navigation.	Charts.	Instruments.	French.	Essay.	Physics.	Drawing.	English Grammar.	TOTAL.
Maximum Marks - -			300			300		175	175	100	150	200	125	175	100	200	2,000
I.	450	1	219			237	-	163	157	87	143	153	122	103	72	148	1,604
I.	463	2	246			210	-	164	146	87	143	153	67	117	75	133	1,541
I.	472	3	205			232	-	167	153	91	133	107	107	113	65	105	1,478
I.	448	4	215			199	-	133	141	91	135	140	98	96	79	122	1,449
I.	459	5	201			218	-	157	127	90	139	132	85	112	77	99	1,437
II.	457	6	185			172	-	142	123	90	131	160	104	98	60	154	1,419
II.	475	7	181			205	-	164	132	90	134	99	88	86	82	106	1,369
II.	443	8	158			216	-	153	114	77	136	118	120	62	84	103	1,346
II.	460	9	206			206	-	160	81	82	117	143	93	102	65	88	1,343
II.	452	10	212			172	-	126	120	83	135	126	63	141	64	95	1,342
II.	458	11	169			151	-	147	112	91	142	142	78	83	71	106	1,292
II.	445	12	171			184	-	134	93	67	119	117	86	95	60	122	1,253
II.	473	13	150			144	-	139	107	83	124	121	110	92	83	96	1,249
II.	470	14	182			168	-	151	110	80	129	111	50	128	51	79	1,239
II.	455	15	221			118	-	135	90	85	117	106	97	74	65	112	1,220
II.	466	16	161			146	-	163	89	78	134	143	67	82	75	63	1,201
II.	464	17	190			118	-	169	119	85	124	137	38	55	66	99	1,200
II.	456	18	157			169	-	173	111	80	96	34	102	92	69	99	1,182
II.	468	19	165			150	-	148	85	93	131	90	67	89	72	71	1,161
II.	465	20	115			111	-	132	93	95	128	104	100	76	80	122	1,156
II.	474	21	170			140	-	164	94	82	118	131	42	36	43	77	1,152
II.	461	22	150			107	-	124	77	85	127	125	83	85	70	100	1,133
II.	453	23	118			102	-	134	96	85	126	100	83	93	65	116	1,118
II.	469	24	155			113	-	110	80	85	120	113	104	70	60	107	1,117
II.	444	25	177			182	-	170	111	77	92	53	61	30	53	106	1,112
II.	462	26	169			121	-	147	120	82	132	105	38	69	67	49	1,099
II.	467	27	149			117	-	125	65	81	125	107	75	67	64	84	1,059
II.	451	28	115			105	-	78	60	87	117	152	59	82	75	124	1,054
II.	446	29æq.	149			106	-	136	85	80	123	102	55	54	67	45	1,002æq.
II.	449		134			94	-	102	77	85	122	122	95	37	71	63	
II.	454		143			142	-	151	99	85	91	41	63	63	68	56	
III.	471	32	129			67	-	90	67	79	133	88	78	79	77	87	974
III.	476	33	135			52	-	124	45	90	119	94	56	65	78	32	890
III.	447	34	75			108	-	98	60	83	112	105	55	48	67	62	873

Her Majesty's Ship "Britannia." }  
18 July 1876.

(signed) T. Archer Hirst,  
Director of Studies.



REPORT by Director of Studies (transmitted by President of College) of the Examination of Cadets of 1st, 2nd, and 3rd Terms in "Britannia," July 1876.

Royal Naval College, Greenwich,  
2 August 1876.

Sir,

IN forwarding the accompanying report of the Director of Studies at this College on the result of the examination in July of cadets of 1st, 2nd, and 3rd terms in Her Majesty's ship "Britannia," I submit for their Lordships' consideration the suggestion of Dr. Hirst (p. 3), that the paper in arithmetic, algebra, and geometry should be divided into one paper in arithmetic and algebra, and one paper for geometry.

I would request their Lordships' attention to the case of Mr. — (2nd term), who becomes liable to be warned under the circumstances mentioned by the Director of Studies.

I understand that Mr. — incurred the penalty prescribed on board the "Britannia" for talking during his examination, viz., dismissal from the room. But I would submit that, in every case in which a cadet has worked any part of the examination questions his paper should be given over to the examiner in order that the marks due to it should be allotted, whatever may be the reason for which he leaves the room.

The Director of Studies thinks it probable that Mr. — might have obtained the requisite marks if his geometry marks had been counted, as he was not backward in that subject; and I observe that the marks obtained by the two next above him would have sufficed.

I am, &c.

(signed) E. G. Fanshawe, Admiral,  
President.

The Secretary of the Admiralty.

[Enclosure to Admiral Fanshawe's Letter of 2nd August 1876.]

Examination of the Cadets of Her Majesty's Ship "Britannia," July 1876.

Royal Naval College, Greenwich,  
2 August 1876.

Sir,

I HAVE the honour to transmit herewith the result of the examination of the cadets of Her Majesty's ship "Britannia," for July 1876, for the first, second, and third terms, in duplicate, the result for the final term having been already communicated to you in my letter of the 18th ultimo.

*Final Term.*—Of the thirty-four cadets of this term, five gained a first-class certificate, 26 a second, and three a third. As has been before reported, Mr. — obtained the requisite number of marks to qualify him for a first-class certificate, but failed to attain the required standard in the mathematical branches of the examination. The impression left upon me, after examining the cadets *vivâ voce* in their mathematical subjects, was that they had been soundly taught and were of good average intelligence. The following Table exhibits the average per-centage of marks obtained in the mathematical and professional subjects by the cadets who have passed out on this and two former occasions :—

SUBJECT.	July 1876.	December 1875.	July 1875.
Arithmetic, Algebra, and Geometry - - -	55·3	59·5	59·8
Trigonometry - - - - -	49·6	50·5	50·6
Practical Navigation - - - - -	80·0	86·4	75·8
Theoretical „ - - - - -	58·0	62·9	57·0
Charts - - - - -	84·5	88·7	82·4
Instruments - - - - -	82·6	82·0	82·4



It will be observed that in no case do these comparative averages materially differ. The average per-centage in the paper embracing arithmetic, algebra, and geometry is still very low—a result which appears due partially to the amalgamation of these three important subjects in a single three hours' paper. Under existing arrangements it is necessary to take these subjects together, in order that the number of papers set in the examination may not exceed the number authorised by their Lordships. The experience of the last three examinations leads me to believe, however, that better results would accrue from the substitution of two papers in place of one, the first of which should include arithmetic and algebra, and the other to be confined to geometry alone.

*Junior Terms.*—The following Table shows for the First, Second, and Third Term, and at the Periods stated, the Average Number of Cadets in each of these Three Junior Terms who obtained certain Per-centages of the Total Number of Marks :—

PER-CENTAGE.	Third Term Cadets.			Second Term Cadets.			First Term Cadets.		
	In July 1876.	In Dec. 1875.	In July 1875.	In July 1876.	In Dec. 1875.	In July 1875.	In July 1876.	In Dec. 1875.	In July 1875.
70 per Cent. and upwards -	2	4	3	—	2	11	3	1	5
60 to 70 per Cent. - -	7	13	2	3	9	18	6	3	10
50 „ 60 „ - -	13	11	10	11	10	6	7	6	17
40 „ 50 „ - -	15	1	3	4	13	—	6	8	6
30 „ 40 „ - -	3	1	—	22	6	1	12	16	2
Below 30 „ - -	—	—	—	4	—	—	1	14	1
Absent Sick - - -	3	2	—	7	4	—	7	3	2
TOTAL - - -	43	22	18	51	44	36	42	51	43

The following Tables give the Average Per-centage of Marks gained in the Mathematical Subjects, for the Third, Second, and First Terms at the Dates specified.—

## THIRD TERM CADETS.

SUBJECT.	In July 1876.	In Dec. 1875.	In July 1875.
Arithmetic - - - - -	47·5	48·0	51·6
Algebra - - - - -			
Geometry - - - - -			
Trigonometry—Plane - - - - -			
„ Spherical - - - - -	—	—	—

## SECOND TERM CADETS.

SUBJECT.	In July 1876.	In Dec. 1875.	In July 1875.
Arithmetic - - - - -	36·0	52·6	68·6
Algebra - - - - -	37·7	53·1	73·0
Geometry - - - - -	30·0	57·5	84·0
Trigonometry—Plane - - - - -	33·1	64·0	60·5
„ Spherical - - - - -	—	—	—

## FIRST TERM CADETS.

SUBJECT.	In July 1876.	In Dec. 1875.	In July 1875.
Arithmetic - - - - -	47·6	60·6	70·6
Algebra - - - - -	66·3	35·4	78·0
Geometry - - - - -	37·1	22·5	76·5
Trigonometry—Plane - - - - -	57·2	46·2	63·4
„ Spherical - - - - -	—	—	—

It is satisfactory to observe that the marks obtained by the first and third terms compare favourably with those obtained by the corresponding terms at the December examination. On the other hand, the marked inferiority displayed by the cadets who entered the “*Britannia*” in July 1875, in all the mathematical subjects is as striking as in December last. It would appear that the attempt to push on those whose case is hopeless has retarded the progress of those whose advancement might otherwise have been satisfactory; and I fear many have proceeded to the more advanced parts of mathematics without ever having been properly grounded in the elementary parts. I may notice here that many of the cadets of the second and some of the third term, have acquired a habit of making use of algebraic symbols in their geometrical work; this practice should be checked as soon as possible.

With regard to the remaining subjects of examination the results in physics, chart drawing, and instruments, and in the paper on astronomy, set to the cadets of the second term, are quite up to the usual average; but in the case of the physical geography read by the cadets during their first term only, increased attention would seem to be called for.

In drawing the improvement I reported at the last examination appears to be maintained.

With regard to Latin I regret to have to report that the results continue unsatisfactory. In none of the terms were more than two or three cadets able, even with the aid of a dictionary, to give a fairly intelligible translation of a piece of previously unseen Latin prose, and very few could satisfactorily construe the passages selected from the parts of Cæsar, Eutropius, &c., supposed to have been read during the term. In fact, the time which can be spared for this subject would almost appear to be inadequate to allow the cadets to do more than imperfectly keep up whatever knowledge of the language they may happen to possess on entry. The translation of easy English sentences into Latin is still uniformly indifferent.

In French the examiner reports a general improvement. He still, however, recommends increased attention to grammar.

It will be seen from the Tables given above that four of the cadets of the second term (names given) failed to obtain 30 per cent. of the total marks. Three of these cadets fell below the required minimum at the Christmas examination, and are therefore liable to be discharged from the service; the remaining case of Mr. — must be regarded as special. The number of marks required in the second term is 450, and Mr. — only obtained 414. It must, however, be noticed that this total includes no marks for geometry, his paper in that subject having been destroyed by the chief instructor of the “*Britannia*,” in consequence of his having been reported for talking during the examination. In the absence of any evidence as to the geometrical knowledge of this cadet it would be useless to express any opinion as to whether he would or would not have obtained the required minimum, had his paper been finished in the usual way; but, it may not be out of place to suggest that difficulties of this sort would be less likely to arise if, in accordance with precedent, all questions as to the reception or objection of papers and as to the general arrangements of the examination, were referred to those who are appointed by their Lordships to conduct the examination. At the recent examination changes from established customs were introduced without the knowledge or concurrence of the examiners, a practice, the continuance of which can only tend to produce inconvenience and confusion.

The

The habit of asking permission to leave the room for a short period appears to be very much on the increase among the cadets during the examination. Arrangements have been made to meet an occasional emergency of this nature, and measures are taken to prevent the cadets holding communication with one another, or referring to books or papers during such absence. The practice, however, has now become so far general that, during every paper, almost from the commencement of time allotted for working it, cadets are constantly leaving and returning to the examination-room. In the entry examinations for naval cadetships and assistant clerkships at the college, cases of this kind are of such rare occurrence that they may be said to be practically unknown, and I cannot but think, though it is undoubtedly a difficult matter to deal with, that something might be done, with the co-operation of the authorities on board, to check this propensity on the part of the cadets to leave the examination-room before giving up their papers.

I am, &c.  
(signed) *T. Archer Hirst*,  
Director of Studies.

*P. S.*—On this occasion I have reported the marks of cadets who were unable on account of sickness to complete their examination.

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The Director of Studies to Vice Admiral *E. G. Fanshawe*.

Her Majesty's Ship "Britannia," Examination, December 1876.—Final Term.

Her Majesty's Ship "Britannia," Dartmouth,  
20 December 1876.

Sir,

I HAVE the honour to forward herewith the results of the examination of the passing out cadets on board Her Majesty's ship "Britannia." Of the 43 examined, three obtained a first-class certificate, 29 a second, and 10 a third; and one, Mr. —, has, I regret to say, failed to obtain 40 per cent. of the total, the proportion necessary to qualify him for a third-class certificate. The Table annexed gives the average per-centage obtained in each of the mathematical subjects, together with those of the three preceding examinations.

	December 1876.	July 1876.	December 1875.	July 1875.
Arithmetic, Algebra, and Geo- metry - - - - }	57·4	55·3	51·5	59·8
Trigonometry - - - -	43·7	49·6	52·6	50·6
Practical Navigation - - -	77·2	80·0	86·4	75·8
Theoretical Navigation - -	53·4	58·0	62·9	57·0

It will be seen from this that in most of these subjects the ordinary standard of proficiency has been well maintained; though, in trigonometry and theoretical navigation, the cadets are, perhaps, a little weaker than usual. In physics, the marks awarded compare very favourably with those of previous examinations. Mr. —, who takes the first place, obtains as much as 87 per cent. of the maximum, and four other cadets, 75 per cent. and upwards. Such results having regard to the numerous branches of the subject comprised in the course, cannot but be considered highly satisfactory.

The essays were decidedly good, and showed that the subject ("Freeman's European History") had been studied with equal care and intelligence; Mr. — (No. 444), stands first on the list, but the essay of Mr. — (No. 479), is almost of equal merit.

The chart drawing is, as usual, very good indeed, the average per cent. being 82·6, as this result denotes; the charts sent in are, in regard to neatness and accuracy, quite up to the usually high standard.



The following Table gives a statement of the number of certificates of each class obtained at the examinations of the past two years. In contrasting, however, the result of the present examination with the three preceding examinations, it must not be forgotten that the conditions under which the body of cadets now passing out compete for certificates are somewhat different. On the one hand the very heavy mathematical paper embracing the three subjects, arithmetic, algebra, and geometry, has been divided into two three-hours' papers, one comprising arithmetic and algebra, and the second geometry alone. It was hoped that by this means some relief would be given to the cadets under examination, and that better results, as regards the average per-centages obtained, would be secured. This expectation, as this Table will show, was not altogether without foundation, there being a slight increase in the average percentage obtained in the aggregate of these subjects; while the improvement in the papers worked in geometry, in particular, is very marked. But any beneficial results accruing from this alteration are far more than balanced by a second important change in the examination. I allude to the substitution of Latin for English grammar as a compulsory subject of examination.

TABULAR STATEMENT OF CLASSES.

	1st Class.	2nd Class.	3rd Class.	Failed.	TOTAL.
In July 1875 - - - -	4	8	3	-	15
In December 1875 - - -	2	17	1	-	20
In July 1876 - - - -	5	26	3	-	34
In December 1876 - - -	3	29	10	1	43

Of the 43 cadets not more than nine obtained half-marks in Latin, and the average per-centage was 52·1 as against 47·5, 63·9, and 72·6, the per-centages obtained in English grammar at the three last examinations, I am, I believe, correct in stating that at the entry examination of the cadets now passing out, Latin was only a voluntary subject; so that many of them may have been wholly ignorant of that language; nor is it surprising that, considering the very small number of hours weekly which can be spared to its study, during their two years' course on board, they have failed to make any material progress up to the present time. Formerly such cadets would have confined their attention to English grammar, a subject in which a diligent student, though dependent entirely on the knowledge acquired during his stay in the "Britannia," might confidently expect to attain a considerable proportion of the total marks. Thus the change could have but one tendency, namely, to reduce the number of first class and swell the number of third class certificates. And it is, I think, to this cause, rather than to backwardness in the body of cadets now passing out, that the results as to the number of first and third class certificates, which, at first sight, appear somewhat less satisfactory than those of former examinations may fairly be ascribed.

I have, &c.

(signed) *H. B. Goodwin,*

Admiral Fanshawe, C.B.

for Director of Studies (on sick leave).

Vice Admiral *E. G. Fanshawe*, C.B., to the Secretary of the Admiralty.

Christmas 1876. Examination of Cadets in Her Majesty's Ship  
"Britannia."

Royal Naval College, Greenwich,  
6 January 1877.

Sir,

I HAVE the honour to forward herewith, for their Lordships' information, the report, and statement of results, of the examination held in December of the cadets of the first, second, and third terms in Her Majesty's ship "Britannia."

These



These results appear to me to call for very serious consideration, particularly as regards the third term, at this examination. Should these cadets pass out of the "Britannia" they will, according to the existing system, enter the college as acting sub-lieutenants about five years afterwards.

There appears no doubt that the efforts made for the instruction of midshipmen, even of those who are not exceptionally backward, do not usually advance them during the five years they are at sea, much, if at all, beyond the point they had reached on leaving the "Britannia."

On leaving the "Britannia" most of the class here referred to will have entered upon the studies of each of the four terms quite unprepared by previous knowledge to cope with the subjects of them; and it appears inconceivable that, even should they get through the "Britannia," they can have the solid foundation of elementary knowledge that will enable them, after five years at sea, to come to the college with any reasonable prospect of passing the sub-lieutenant's examination.

Though this failure appears more distinctly probable in the case of the class referred to, I would submit that the knowledge acquired by the classes junior to this class, as compared with that obtained by previous cadets, affords no good hope that they will be well prepared for the sub-lieutenant's examination.

I offer these remarks for their Lordships' consideration, as the matter seems to me of very serious importance in its relation to the future supply of moderately well-educated officers, to ensure which may be found to require some modification of the system under which young officers now obtain the knowledge necessary to enable them to pass for lieutenants.

I am, &c.

(signed) *E. G. Fanshawe*,  
Admiral President.

The Secretary of the Admiralty.

Director of Studies to Vice Admiral *Fanshawe*, C.B.

Examination of Cadets of Her Majesty's Ship "Britannia," December 1876.

Royal Naval College, Greenwich.

6 January 1877.

Sir,

I HAVE the honour to transmit herewith the result of the examination recently held on board the "Britannia," for the cadets of the first, second, and third terms, in duplicate. The results of the examination of the cadets passing out having been already reported in detail in my letter of the 19th ultimo.

The numbers of cadets in the several terms who gained certain stated percentages of the total number of marks are given in the annexed Table.

PER-CENTAGE.	Third Term Cadets.				Second Term Cadets.				First Term Cadets.			
	Dec. 1876.	July 1876.	Dec. 1875.	July 1875.	Dec. 1876.	July 1876.	Dec. 1875.	July 1875.	Dec. 1876.	July 1876.	Dec. 1875.	July 1875.
70 per Cent. and upwards	1	2	4	3	2	—	2	11	9	3	1	5
60 to 70 per Cent.	3	7	13	2	—	3	9	18	5	6	3	10
50 „ 60 „	9	13	11	10	9	11	10	6	4	7	6	17
40 „ 50 „	8	15	1	3	8	4	13	—	8	6	8	6
30 „ 40 „	17	3	1	—	16	22	6	1	10	12	16	2
Below 30 „	3	—	—	—	5	4	—	—	6	1	14	1
Sick	2	8	2	—	—	7	4	—	—	7	3	2
TOTAL	43	43	32	18	40	51	44	36	42	42	51	43

The following Tables give the average per-centage of marks gained in the mathematical subjects for the third, second, and first terms respectively, at the dates specified :—

## THIRD TERM CADETS.

SUBJECT.	December 1876.	July 1876.	December 1875.	July 1875.
Arithmetic - - - - }	29·9	47·5	48·0	51·6
Algebra - - - - }				
Geometry - - - - -	37·1	67·0	53·0	50·8
Trigonometry—Plane - }	34·9	46·0	64·0	60·3
„ Spherical - }				

## SECOND TERM CADETS.

SUBJECT.	December 1876.	July 1876.	December 1875.	July 1875.
Arithmetic - - - - -	49·6	36·0	52·6	68·6
Algebra - - - - -	34·0	37·7	53·1	73·0
Geometry - - - - -	29·9	30·0	57·5	84·0
Trigonometry—Plane - }	37·8	33·1	64·0	60·5
„ Spherical - }				

## FIRST TERM CADETS.

SUBJECT.	December 1876.	July 1876.	December 1875.	July 1875.
Arithmetic - - - - -	52·5	47·6	60·6	70·6
Algebra - - - - -	54·4	66·3	35·4	78·0
Geometry - - - - -	54·0	37·1	22·5	76·5
Trigonometry—Plane - -	49·6	57·2	46·2	63·4
„ Spherical - - - -	—	—	—	—

It will be seen from these Tables that the cadets of the third term continue to show signs of the same inferiority which was commented upon at the examination at the end of their first and second terms. The averages obtained are low, almost beyond precedent; and it is hardly too much to say that a considerable proportion of the cadets of this term are quite unfit to proceed to the study of the fourth term subjects. In the first and second terms the results do not materially differ from those of the two examinations immediately preceding, though they contrast unfavourably with those of the examination held in July 1875; at that time it should be observed almost all the cadets on board had entered the service under the system of limited competition, and had for the most part, received some mathematical training before joining the “Britannia,” and then may possibly have been better able to enter upon the course of study on board than those who entered more recently.

Three cadets of the third term, Messrs. —; five of the second term, Messrs. —, and six of the first term, Messrs. —, have obtained less than 30 per cent. of the total marks, and are, therefore, liable to be warned; besides these, I have to call attention to the case of another cadet, Mr. —, who only obtained 328 marks in all, whereas 30 per cent. of the total is 525; but he was absent through sickness from the paper on chart drawing, and the *viva voce* examination in instruments. The total number of marks for these two subjects is 175, so that had he obtained full marks in each, he would still have fallen below the per-centage required. Mr. —’s (the same cadet)

cadet) conduct was twice brought under the notice of the examiners, once during the paper in physics, when, having been observed talking to another cadet, he was sent from the examination-room by the Chief Naval Instructor, and not permitted to finish his paper; and again, during the examination in Latin, when a triangle (used in drawing parallel lines) was found in his possession, having written upon its under side the rules for applying variation of compass. It is right to add that he did not actually derive any assistance from this source, as the examination in navigation had not then taken place; while, as I have already said, he was not present during the examination in chart drawing at all; and these are the only two papers in which questions affecting the variation of the compass occur.

The knowledge of Latin continues very slight in all the terms; few of the cadets appear to be sufficiently advanced to read "Virgil," which was one of the text-books selected during the past term. Some easier author might, I think, be substituted with advantage.

The results in the remaining subjects of examination are up to the usual standard, and do not call for special notice.

I am, &c.

Admiral Fanshawe, C.B.

(signed) *H. B. Goodwin*,  
for Director of Studies (on sick leave).

Admiral *E. G. Fanshawe*, C.B., to the Secretary to the Admiralty.

Extension of Period of Study for Third Term Cadets in Her Majesty's Ship  
"Britannia."

Royal Naval College, Greenwich,

16 February 1877.

Sir,

IN reply to your letter of the 15th instant, C., directing me to call upon the Director of Studies to name the cadets of the third term in Her Majesty's ship "Britannia" who should remain a term longer than usual in that ship owing to want of progress in study, I have the honour to submit a copy of the remarks of the officer by whom, in Dr. Hirst's absence, the examination was conducted; also a list of the third term cadets who should, in my opinion, be permitted to continue for an extra term.

I am, &c.

(signed) *E. G. Fanshawe*,  
Admiral President.

The Secretary of the Admiralty.

16 February 1877.

Of the 41 cadets in this (the third) term examined in December 1876, twenty failed to obtain 40 per cent. of total marks, and of these all except two fell below 30 per cent. in mathematical subjects (algebra, geometry and trigonometry). Besides these, three of the four cadets who occupy places 18 to 21 on the list, although above 40 per cent. on the whole, did not obtain 30 per cent. in mathematics. In all these cases the results are, I think, so unsatisfactory as to warrant the conclusion that the proposed extension of the usual period of study would be advantageous. The subjoined Table gives the number of third term cadets who have failed to reach the stated per-centages on former occasions

EXAMINATION.	Number of Cadets of Third Term.	Mathematics.	In General Subjects (Total).
		Below 30 per Cent.	Below 40 per Cent.
July 1875 - - - - -	18	—	—
December 1875 - - - - -	30	1	1
July 1876 - - - - -	40	3	2
December 1876 - - - - -	41	21	20

*P.S.*—Three cadets Messrs. —, having been sick during the whole or a portion of the examination, the results are, in their case, incomplete. They have all, however, shown such weakness at previous examination that they, too,



should be included in the list of those who are to prolong their studies, with the additional reason that their absence from study through sickness must necessarily have entailed a loss of progress more or less considerable.

(signed) *H. B. Goodwin,*  
for Director of Studies (on sick leave).

REPORT of Chief Instructor of "Britannia" on the Abilities of the Cadets entered 15 January 1877.

Transmitting Principal Naval Instructor's Report on newly-entered Cadets.

Her Majesty's Ship "Britannia," Dartmouth,  
1 March 1877.

Sir,

I HEREWITH forward for your information and the consideration of their Lordships a report from the Principal Naval Instructor, called for by me, upon newly-entered cadets, after a month's instruction and training in the "Britannia."

Admiral Sir J. M. C. Symonds, K.C.B.,  
Commander in Chief.

I have, &c.  
(signed) *W. Graham,*  
Captain.

(Enclosure.)

REPORT on First Term Cadets.

Her Majesty's Ship "Britannia," Dartmouth,  
28 February 1877.

Sir,

IN reply to your request for a report on the qualification of the cadets of the first term, I have to observe that they are much stronger in mental power than the cadets who entered on the three previous occasions.

The test applied seems to have been far more satisfactory than that applied in former cases, for the attainments are much more even.

Taking the general ability of the new cadets, as far as we can judge, from the experience of a month's work with their naval instructors, 10 of them are of first rate ability, 15 are of good second rate power, 10 are of inferior or third rate power, while three are unquestionably weak or unequal to our course.

That there is a great difference in the intellectual power of these cadets and those whom we have had previously can be seen from the great difference in the class lessons in geometry, and in their comprehension of the theoretical work generally.

The marks on entry seem, however, to have been in advance of their attainments.

The mere fact of knowing 12 propositions will not account for all the difference, but it has had the advantage of directing their education to geometry before coming here. Thirteen have very good geometrical power, 10 have very fair power, 14 not satisfactory or inferior power. The development of first class power in such a short time in a satisfactory number seems to show that we have better material than has been given us in the last three terms.

I must also observe that the conduct in study is very satisfactory.

I have, &c.  
(signed) *J. Clement T. Aldous,*  
Chief Instructor.

Naval Instructor's Report on newly-entered Cadets in Her Majesty's Ship "Britannia."

"Royal Adelaide" in Hamoaze,  
2 March 1877.

(No. 261—1 Enclosure.)

Submitted for the information of the Lords Commissioners of the Admiralty.

The Secretary of the Admiralty.

*T. M. Symonds,*  
Admiral.



RETURN showing the PLACES obtained by NAVAL CADETS Entered under Limited Competition when passing in and out of the "BRITANNIA."

## CADETS.

Date of Entry.	Order of Passing.		Date of Entry.	Order of Passing.	
	In.	Out.		In.	Out.
15 Jan. 1870	1	2	15 Jan. 1871	1	1
	2	14		2	4
	3	1		3	12
	4	6		4	2
	5	3		5	D. service.
	6	7		6	3
	7	D. service.		7	9
	8	8		8	11
	9	5		9	6
	10	16		10	14
	11	15		11	21
	12	4		12	19
	13	24		13	D. service.
	14	9		14	17
	15	12		15	25
	16	20		16	16
	17	21		17	22
	18	27		18	13
	19	17		19	18
	20	10		20	*
	21	11		21	5
	22	18		22	Failed to pass.
	23	23		23	20
	24	19		24	10
	25	26		25	8
	26	25		26	7
	27	13			
15 July 1870	1	1	15 July 1871		
	2	9			
	3	5		1	12
	4	2		2	4
	5	7		3	26
	6	8		4	2
	7	19		5	Dismissed.
	8	21		6	19
	9	10		7	18
	10	11		8	5
	11	6		9	15
	12	3			
	13	32		10	3
	14	13		11	14
	15	12		12	32
	16	31		13	7
	17	13		14	16
	18	23		15	31
	19	18		16	25
	20	17		17	23
	21	28		18	10
	22	16		19	8
	23	21		20	1
	24	26		21	9
	25	4		22	Failed to pass
	26	24			out.
	27	D. service.		23	29
	28	Failed to pass.		24	22
	29	33		25	33
	30	D. service.		26	11
	31	29		27	6
	32	15		28	20
	33	27		29	21
	34	25			
	35	D. service.		30	28
	36	20		31	17
	37	35		32	24
	38	34		33	27
	39	D. service.		34	13
	40	30		35	30

\* Put back a term on account of loss of time through sickness; he eventually passed out 25 in July 1873.

## CADETS—continued.

Date of Entry.	Order of Passing.		Date of Entry.	Order of Passing.	
	In.	Out.		In.	Out.
15 Jan. 1872	1	3	15 July 1872— continued.	20	17
	2	1		21	36
	3	5		22	33 æq.
	4	18		23	23
	5	2		24	31
	6	Resigned.		25	27
	7	11		26	22
	8	8		27	D. service.
	9	7		28	Failed to pass.
	10	9		29	8
	11	15		30	30
	12	28		31	2
	13	14		32	4
	14	4		33	32
	15	12		34	18
	16	16		35	7
	17	25		36	33 æq.
	18	13		37	35
	19	26		38	5
	20	22		1	4
	21	20		2	1
	22	32		3	10
	23	33		4	5
	24	6		5	3
	25	21		6	14
	26	24		7	7
	27	30		8	18
	28	10		9	9
	29	Failed to pass out.		10	11
	30	29		11	6
	31	Discharged, physically unfit.		12	17
	32	Failed to pass out.		13	20
	33	27		14	13
	34	19		15	21
	35	31		16	15
	36	17		17	Discharged, physically unfit.
	37	34		18	12
	38	23		19	19
	39	D. service.		20	2
15 July 1872	1	11	15 July 1873	21	8
	2	1		22	16
	3	6		1	6
	4	21		2	11
	5	12 æq.		3	3
	6	3		4	5
	7	12 æq.		5	*
	8	9		6	4
	9	15		7	1
	10	24		8	9
	11	19		9	2
	12	28		10	10
	13	16		11	Failed to pass.
	14	25 æq.		12	Drowned before joining.
	15	25 æq.		13	13
	16	20		14	8
	17	10		15	14
	18	29		16	12
	19	14		17	15
				18	7

• Put back a term on account of ill-health; he eventually passed out last in December 1875.

## CADETS—continued.

Date of Entry.	Order of Passing.		Date of Entry.	Order of Passing.	
	In.	Out.		In.	Out.
15 Jan. 1874	1	1	15 Jan. 1875	1	3
	2	2		2	1
	3	6		3	13
	4	7		4	5
	5	15		5	16
	6	3		6	11
	7	12		7	40
	8	10		8	26
	9	18			
	10	D. service.		9 æq.	2
	11	9		9 æq.	7
	12	8			
	13	13		11	9
	14	16		12	6
	15	17		13	15
	16	5		14	19
	17	11		15	18
	18	19		16	17
	19	14		17	39
	20	4		18	30
15 July 1874	1	12	15 Jan. 1875	19	34
	2	3		20	12
	3	5		21	37
	4	1		22	29
	5	21		23	24
	6	10		24	35
	7	19		25	28
	8	11		26	10
	9	33		27	38
	10	20		28	14
	11	2		29	42
	12	24		30	36
	13	6		31	25
	14	9		32	4
	15	23		33	22
	16	18		34	8
	17	8			
	18	17		35	D. S. physically unfit.
	19	22		36	20
	20	4		37	Failed to pass out.
	21	5		38	41
	22	30		39	31
	23	13		40	Withdrawn.
	24	Deserted.		41	23
	25	29		42	27
	26	25		43	33
	27	31		44	21
	28	14		45	32
	29	26			
	30	Resigned.			
	31	7			
	32	16			
	33	27			
	34	28			
	35	32			

*Note.*—In many cases the place assigned in this Return as the order of merit of a cadet on passing out is not that actually given in the report of the result of the Examination, as it was found necessary to eliminate certain numbers in the passing-out order of merit, in order to preserve the relative positions on passing in and out, in consequence of certain of the cadets (*e.g.*, Colonial and Navigating) having competed at the passing-out Examination only.

RETURN showing the PLACES gained and lost by NAVAL CADETS Entered under Limited Competition on passing in and out of the "BRITANNIA."

Date of Passing out.	Number of Cadets who gained Places.						Number of Cadets who lost Places.						Number who re-tained their Place.	Number who failed to pass out.
	From 1 to 5 Places.	From 5 to 10 Places.	From 10 to 20 Places.	From 20 to 30 Places.	From 30 to 40 Places.	Total who gained.	From 1 to 5 Places.	From 5 to 10 Places.	From 10 to 20 Places.	From 20 to 30 Places.	From 30 to 40 Places.	Total Number who Lost.		
December 1871	9	3	1	-	-	13	7	2	2	-	-	11	2	-
July 1872	12	4	4	-	-	20	8	2	4	-	-	14	1	1
December 1872	6	-	4	-	-	10	6	3	-	-	-	9	3	1
July 1873	5	7	5	2	-	19	3	5	5	1	-	14	-	2
December 1873	12	2	5	-	-	19	7	4	2	-	-	13	2	2
July 1874	8	1	1	4	1	15	6	6	7	-	-	19	2	1
December 1874	5	2	2	-	-	9	5	5	-	-	-	10	3	-
July 1875	4	4	-	-	-	8	3	1	-	-	-	4	3	1
December 1875	4	1	2	-	-	7	7	2	-	-	-	9	3	-
July 1876	6	7	4	1	-	18	6	2	6	1	-	15	-	1
December 1876	3	5	8	3	-	19	8	5	8	1	1	23	-	-
						157						141	19	9

RETURN showing the Number of CANDIDATES for NAVAL CADETSHIPS nominated for the Examinations between June 1872 and November 1876 (inclusive); the Number who went up for Examination; the Number Entered at each Examination; and the Total Entries for each Year.

EXAMINATION.		Number of Nominations.			Medical Rejections.	Non-appearances.	Sick.	Number up for Examination.	Number Entered.	Colonial Cadets Entered.	Total Entries for each Year.
		Fresh Nominations.	Candidates entitled to a Second Trial.	Total.							
1872	June	52	22	74	1	-	-	73	38	1	61
	November	20	24	44	1	-	-	43	22		
1873	June	37	2	39	1	1	2	35	18	-	38
	November	36	5*	43	-	1	2	40	20		
1874	June	67	3*	72	10	2	-	60	35	-	81
	November	70	3	73	3	4	-	66	45		
1875	June	65	3	68	2	-	-	66	32	-	94
	November	60	5	65	2	-	-	63	42		
1876	June	52	9	61	5	-	-	56	39	2	79
	November	58	6	64	4	-	-	60	38		

\* And two sick from last Examination.





## NAVAL CADETS ("BRITANNIA").

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REPORTS made since January 1876 by the DIRECTOR of NAVAL STUDIES at *Greenwich* on the State of Proficiency of the CADETS of the "Britannia," appointed under the Revised System of Nomination without Competition.

(*Mr. Shaw Lefevre.*)

REPORT of the CHIEF NAVAL INSTRUCTOR of the "BRITANNIA," on the Newly-entered CADETS; RETURN showing the Places obtained by NAVAL CADETS entered under Limited Competition when passing in and out of the "BRITANNIA," &c.

(*Mr. Algernon Egerton.*)

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*Ordered, by The House of Commons, to be Printed,  
31 May 1877.*

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RETURN to an Order of the Honourable The House of Commons,  
dated 20 July 1877;—for,

COPY "of CORRESPONDENCE relating to the MOUNT BOONE ESTATE."

Admiralty,  
20 July 1877.

THOS. WOLLEY,  
Chief Clerk.

— No. 1. —

Mr. A. G. Ditton to the Secretary to the Admiralty.

9, Ironmonger-lane, London, E.C.,  
12 July 1877.

Sir,

MY attention has been called by my client to a question put in the House of Commons on the 10th instant with reference to the Mount Boone Estate, a portion of which it is said the Admiralty are desirous of acquiring for the purposes of a naval college, and on reference to the "Standard" of yesterday, it appears that you stated, in reply to Sir Frederick Perkins, that the statement that the Mount Boone Estate at Dartmouth was not for sale was untrue. I am requested to ask you to be good enough to give me an explanation of this statement, and to inform you that the Mount Boone Estate is not for sale. It was purchased a few years ago of Sir Henry Seale, as the residential estate for a young gentleman for whom I am acting as solicitor, and who is a member of the Raleigh family, and there is no intention whatever on the part of the family of this young gentleman to part with any portion of this estate. It appears, also, in the daily press, that you stated you had an offer of a portion of the estate, which would hold good until the end of the Session. Will you also kindly give me an explanation of this, as I cannot possibly understand from whom such an offer could have emanated.

As soon as my attention was called to this matter I wrote to Mr. G. F. Smith, solicitor to the trustees, a letter of which I send you a copy, and also Mr. Smith's reply to me; from these two letters I think you will be able to see how the matter stands.

I must confess that it strikes me as being somewhat peculiar, that a public statement should appear to the effect that an offer of a portion of this estate has been made to the Admiralty, while no intimation whatever even of any negotiation is made to those who are most concerned in the matter, namely, the owner of the estate.

To the Hon. A. F. Egerton, M.P.,  
Secretary to the Admiralty.

I am, &c.  
(signed) A. G. Ditton.

This letter was acknowledged by Mr. Egerton, and Mr. Ditton was informed that his letter would be referred to the receiver of the estate, and it was referred accordingly, and the answer No. 2, with its Enclosures, received.

— No. 2. —

Mr. *E. J. Smith* to the Secretary of the Admiralty.16, Whitehall Place, S.W.,  
13 July 1877.

Sir,

I BEG to acknowledge the receipt of your note enclosing a letter and correspondence received from Mr. Ditton. A copy of the letter I received yesterday from the solicitor to the estate; and send on the other side a copy of my reply.

I know that Mr. Raleigh is entitled to 500 *l.* a year out of this estate, and I believe to a residence, but I have never had the pleasure of seeing Mr. Ditton, and I cannot endorse his statement that his clients are the owners of the estate. I return his letter and correspondence.

I take the opportunity of sending copies of the replies of the trustees, Lord R. H. Browne and Sir Edward Dering, on the subject.

I have, &amp;c.

Hon. A. F. Egerton, M.P.

(signed) *Edmund James Smith.*

## COPY of REPLY.

Dear Sir,

12 July 1877.

I RETURNED to London late last night, and have just read Mr. Ditton's letter of the 11th instant. The letter contains one sentence, "there could be no objection to Mr. Smith receiving any proposals which might be made to him," which is the gist of the whole matter. The Admiralty can make no offer, because it has not got the money, but it can state its opinion that the proposed site is the best site, and it can get authority for an amount of money for a naval college on shore.

I certainly can state, as I have stated, that if the Vote is not taken this year, I shall not advise the opportunity to be kept open for another year; I return Mr. Ditton's letter.

Yours, &amp;c.

George F. Smith, Esq.

(signed) *Edmund James Smith.*

## Enclosure 1, in No. 2.

## RALEIGH ESTATE.

Dear Sir,

Reigate, 16 January 1875.

I HAVE received your letter, enclosing copy of one from your brother, respecting the sale of a portion of the property purchased under the will of the late Walter Raleigh, Esq. I quite see the advantages pointed out by Mr. Edmund Smith, and readily concur, should he be enabled to effect a sale.

I presume the proposed site will not encroach on the grounds of the dwelling-house, or lessen its value; or if it should do so, that the benefit accruing to the estate will more than counterbalance the loss.

Perhaps if the sale is carried out the proceeds might be made available for the purpose of the reclamation of a portion of the foreshore, as I remember to have been suggested by your brother as a great possible addition to the property at a comparatively small cost.

I remain, &amp;c.

G. F. Smith, Esq.,  
15, Golden Square.(signed) *Richard H. Browne.*

## Enclosure 2, in No. 2.

My dear Sir,

Sheerland House, Penchley, 16 January 1875.

I REPLY to yours, enclosing me a copy of your brother's letter. I have not a moment's hesitation in saying that if the authorities could be induced to establish a college on the site you point out, I think that, both directly and indirectly, it would be most advantageous to the Raleigh Estate, and I should most cordially entertain such a proposal.

Believe me, &amp;c.

G. F. Smith, Esq.

(signed) *Edmund C. Dering.*





NAVAL CADETS' COLLEGE SITE  
(MOUNT BOONE ESTATE).

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COPY of CORRESPONDENCE relating to the  
MOUNT BOONE ESTATE.

(*Mr. Algernon Egerton.*)

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*Ordered, by The House of Commons, to be Printed,  
20 July 1877.*

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356.

*Under 1 oz.*

509

"CHALLENGER" EXPEDITION.

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RETURN to an Order of the Honourable The House of Commons,  
dated 30 April 1877;—for,

COPY " of any INSTRUCTIONS addressed by the Lords of the Treasury to Sir *Wyville Thomson*, with reference to the Determination, Description, Publication, and Disposal of the SPECIMENS of NATURAL HISTORY procured by the 'CHALLENGER' EXPEDITION, together with the Dates of such Communications."

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Treasury Chambers, }  
11 May 1877. }

W. H. SMITH.

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(19,486—76.)

Mr. R. R. W. Lingen to Sir C. Wyville Thomson.

Sir,

Treasury Chambers, 23 December 1876.

IN reply to your letter of the 30th of October last, upon the subject of the "Challenger" Collection, I am directed by the Lords Commissioners of Her Majesty's Treasury to furnish you with the inclosed extract from a letter received by my Lords from the Council of the Royal Society, dated the 8th instant, and with the inclosed copy of the reply which my Lords have made to it.

I am to request that you will prepare, in a complete form, such an estimate (omitting names) as is stated in the following extracts from your letter now under reply, viz. :—

1. " I ask for the next financial year for myself half my present salary (500 *l.*), and an allowance, when travelling on this special duty, of 1 *l.* a day for travelling expenses. This simply saves me from loss; for although I can now give my lectures in the University, the whole of the rest of my time is occupied to the exclusion of all literary or other employment."

2. " I wish to retain Mr. Murray as a permanent assistant, and considering that his whole time is employed, and that his work in connection with the expedition has been invaluable, and such as to render his further co-operation essential, I do not think he should be paid less than 400 *l.* a year."

3. " I should wish to have the option of retaining Mr. Wild, as secretary and artist, at his present salary 400 *l.*, or in case of not coming to an arrangement with him, some suitable person in his place."

4. " I should wish to retain Frederick Pearcey, at his present salary of 100 *l.* for the first year, probably with a small rise for the second."

" In the other departments, probably, payment for work done might usually be more satisfactory; but I think it would be desirable to leave it to the discretion of the director how certain services were to be paid, whether by the piece, or by a salary for a certain time."

" During the next year it will be necessary to separate the whole collections of the species from the different stations into separate bottles, a process which will involve a large expenditure of jars and spirit."

" Those specialists who are working up the different departments will be

"paid at a certain rate per sheet, but it will also be necessary for them to give constant employment to several artists."

"For these various purposes, I must ask, for the next financial year, the sum I originally named, 4,000 l."

It will be necessary that you should state, under separate heads—

1. Salaries.
2. The amount set aside for piece-work.
3. Ditto for vessels, spirit, and materials generally.

You will be careful to consider what charges, and what amount of each will come in course of payment between 1st April 1877 and 31st March 1878, both inclusive, and include no other sums in your year's Estimate.

You will add an estimate of the total charge for completing the work.

If you are likely to make any demands upon the Hydrographical Department of the Admiralty during the same year, the extent of them should be stated with your estimate.

You speak of maps and other hydrographic details.

My Lords observe, also, that you speak of the constant employment of several artists.

You will of course understand that the appointment and removal of all persons employed by you rests and will continue to rest with the Treasury. You will in each case submit the name, your reasons for recommending it, and the proposed rate of remuneration. My Lords wish that, so far as the nature of the case admits of it, piece-work, or at any rate total sums, of which a substantial part is to be retained until the completion of the work assigned, be the mode of remuneration adopted.

All your requisitions for stationery, printing, and engraving, must be made upon Her Majesty's Stationery Office, and you should put yourself into communication with the Comptroller, Prince's-street, Storey's Gate, London, S.W.

The publication of your work, and all contracts with printers and engravers, must also be conducted by him. He has been instructed accordingly, and furnished with such information as will enable him to understand your requisitions.

So far as fixtures and materials are concerned, such things are provided through Her Majesty's Office of Works, for all public buildings, but you may more conveniently include such items in your own estimate, so long as your work goes on in a building not in charge of that department, which my Lords understand to be the case, at least for the present.

As soon as my Lords have approved of your estimate, they will proceed to inform you of the appointments which, on your recommendation, they are pleased to make as from 1st of April next.

Sir C. Wyville Thomson,  
20, Palmerston-place, Edinburgh.

I am, &c.  
(signed) *R. R. W. Lingen.*

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Enclosure No. 1.

EXTRACT from LETTER from ROYAL SOCIETY.

The Royal Society, Burlington House,  
8 December 1876.

Sir,

I AM desired by the President and Council of the Royal Society to state, for the information of the Lords Commissioners of the Treasury, that they have carefully considered a Report of the Circumnavigation Committee of the Society upon the documents relating to the disposal of the collections of H. M. S. "Challenger," which have been forwarded to them by their Lordships, and I am to submit the following statement of the views of the President and Council upon the whole subject:—

1. From the correspondence which has been laid before them by the Lords Commissioners



Commissioners of the Treasury, the President and Council of the Royal Society understand—

2. That in 1872, Sir C. Wyville Thomson was appointed director of the scientific civilian staff on board H. M. S. “Changeller” by the Lords Commissioners of the Admiralty, with the knowledge that, on the return of the “Challenger” Sir C. W. Thomson would resume his position as Professor of Natural History in the University of Edinburgh, and would be thereby compelled to reside in Edinburgh for the greater part of the year.

3. That Sir C. W. Thomson accepted the position of director on the express understanding that, on the return of the expedition, he would be provided with the means of working out and publishing the scientific results of the voyage, though in form this point was necessarily left for the decision of the Government for the time being. Sir C. W. Thomson,  
30 October.

4. That the collections made during the voyage were to be temporarily disposed of in accordance with Sir C. W. Thomson’s recommendations. Admiralty,  
3 December 1872.

5. That all the collections, scientific journals, and other data, were to be considered the property of the Government, pending the orders of the Government as to their ultimate disposal. Admiralty,  
3 December 1872.

6. That in accordance with Sir C. W. Thomson’s recommendations, the Lords Commissioners of the Admiralty sanctioned the temporary deposit of all the collections sent home during the voyage, in Edinburgh.

7. That the primary object of the voyage of the “Challenger” was the investigation of the physical and biological conditions of the oceanic basins, in accordance with a Memorandum drawn up by a Committee of the Royal Society and adopted by the President and Council, the suggestions contained in which Memorandum the Lords of the Admiralty desired should be followed so far as circumstances would permit. Admiralty,  
3 December 1872.

8. That the great bulk of the collection and of the observations made during the voyage of the “Challenger” consists of specimens and observations which illustrate the physical and biological condition of the oceanic basins.

9. That the rest, forming a comparatively small part of the whole, are what may be called occasional specimens collected as opportunity presented itself, and having no special bearing on the primary object of the voyage.

\* \* \* \* \*

12. Sir C. W. Thomson \* \* \* \* \* proposes—

Thomson,  
30 October 1876.

(a.) “That the Botanical Collections, which are of no great extent, should remain in the custody of Dr. Hooker, and be distributed from “Kew under his direction.”

(b.) “That the birds should be handed over to Dr. Scater, who will have them determined according to a detailed scheme which has been already discussed between us; and I would propose that Dr. Scater be requested to select a full and characteristic series of birds, including all important varieties of plumage and stages of growth, for the British Museum, the remaining duplicates to be returned to me, to be afterwards distributed with the sanction of their Lordships. This arrangement with regard to the birds, which I am satisfied is the best, would involve no expense.”

(c.) “That the fishes be, in like manner, sent to Dr. Günther for determination and description, and that Dr. Günther be requested to select a complete set for the British Museum, including all unique specimens, and two specimens of all species of which there are more than three. The remaining duplicates to be returned to me for distribution with the sanction of their Lordships.”

(d.) “That the small number of Land Mammals, Reptiles, and Insects be sent, *in globo* and unconditionally, to the British Museum.”

(e.) “That the whole remainder of the collection, including Marine Invertebrate Animals, samples of the bottom, samples of water, for physical and chemical examination, remain under my charge as hereto-

"fore, my chief assistant, Mr. Murray, keeping a check list of the whereabouts of all the specimens placed temporarily for any purpose out of my custody, so that in case of my lapsing he may be familiar with the whole arrangement; that a complete type series of all species be selected by me as soon as they are determined and described, and sent to the British Museum, the duplicates remaining in my hands to be afterwards distributed according to the instructions of their Lordships."

13. The President and Council have carefully considered these \* \* \* proposals, and they beg leave to offer the following remarks upon them :—

14. The specimens enumerated under the heads (a), (b), (c), (d) in paragraph 12 are, for the most part, what they have termed "occasional specimens," and in the interests of science, with which alone the President and Council consider themselves to be concerned, the manner of their disposal \* \* \* does not appear to be a matter of any very great importance. They are, however, convinced that both in the interests of science, and in view of economy, no arrangement could be better than that proposed by Sir C. W. Thomson, according to which the work will be done by the highest authorities in their respective subjects in the country, while the naming of the specimens will involve no expense to the Government. The President and Council are of opinion that under these circumstances the distribution of duplicate specimens should be effected by Sir C. W. Thomson according to such instructions as he may receive from the Government.

15. With regard to the collections referred to under 12 (e), they are the *pièces justificatives* of a large part of the results of the investigations of the "Challenger" and \* \* \*

16. The President and Council of the Royal Society are of opinion that the collections now under consideration should be worked out zoologically and anatomically according to a uniform and well-considered plan, with constant reference to the bearing of the facts which they reveal upon the objects of the voyage \* \* \* under the guidance of the Director of the Scientific Staff, whose residence in Edinburgh renders it necessary that the collection should, for the present, remain in that city.

18. The considerations now submitted to the Lords of the Treasury lead the President and Council of the Royal Society to express their entire approbation of the principle of Sir C. W. Thomson's proposals, and they hope that their Lordships will see fit to leave the collection mentioned under paragraph 12 (e) in his charge, to be worked out under his direction.

20. In the event of the Lords Commissioners of the Treasury approving of the general views set forth in this letter, the President and Council are prepared to give their advice upon the financial and administrative details referred to by their Lordships; and if it be thought expedient for the interests of the public service, they will undertake the general superintendence of the work which Sir C. Wyville Thomson will have to carry out.

I have, &c.  
(signed) *Thomas H. Huxley*,  
Secretary, R.S.

The Secretary of the Treasury.

Enclosure No. 2.

(19,486—76.)

Sir,

Treasury Chambers, 23 December 1876.

I AM directed by the Lords Commissioners of Her Majesty's Treasury to request you to accept, and also to express to the Council of the Royal Society, the thanks of the Board of Treasury for the very valuable advice conveyed in  
Professor

Professor Huxley's letter of the 8th instant, in reply to the letter which my Lords caused to be addressed to you on the 22nd ultimo relative to the disposal of the “Challenger” Collection.

My Lords are prepared generally to follow this advice.

They have instructed Sir Wyville Thomson to dispose of the collection in the manner you propose, and they have informed him that they will insert a sum not exceeding 4,000 *l.* in the Estimates 1877-78 to provide for working out the collections, included in paragraph 12 (*e*) of the letter now under reply, zoologically and anatomically according to a uniform and well-considered plan under his own guidance.

My Lords think it advisable that Sir Wyville Thomson should himself prepare this estimate, and himself account directly and exclusively to the Treasury for the expenditure of the Vote to be taken. At the same time, my Lords gratefully accept the offer conveyed on behalf of yourself and of the Council of the Royal Society in paragraph 20 of the letter now under reply, to advise my Lords upon the financial and administrative details of this undertaking. My Lords are not disposed to adopt the proposal at the end of Sir Wyville Thomson's Report to the Captain of the “Challenger,” dated 22nd November 1875, that he should be made one of a committee of three. My Lords think that it will be better to retain Sir Wyville Thomson's sole responsibility for the execution of the work, subject to such instructions as the Treasury may give him from time to time, with the understanding that my Lords will make free use of the permission accorded to them of consulting the Council of the Royal Society upon all points where they desire to have the Society's advice and assistance, and with the condition that Sir Wyville Thomson will report progress to them in the first quarter of 1878, and so on from year to year until the work is completed, in such a form as will enable my Lords to judge of the progress, and to obtain advice upon all those particulars of the work which may require it.

I am, &c.

(signed) *R. R. W. Lingen.*

The President of the  
Royal Society.



"CHALLENGER" EXPEDITION.

COPY of INSTRUCTIONS addressed by the Lords of the Treasury to Sir *Wyllie Thomson*, with reference to the Determination, Description, Publication, and Disposal of the SPECIMENS of NATURAL HISTORY procured by the "CHALLENGER" EXPEDITION, together with the Dates of such Communications.

(*Sir Philip Grey Egerton.*)

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*Ordered, by The House of Commons, to be Printed,  
28 June 1877.*

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375

NAVY (TRIAL OF COAL).

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RETURN to an Order of the Honourable The House of Commons.  
dated 3 May 1877;—for,

RETURN “of all EXPERIMENTS made by the ADMIRALTY on COAL and  
PATENT FUEL since the Date of the last Return, the 9th of March 1876:”

“And, Copy of any CORRESPONDENCE having special Reference to the relative  
Value of various COALS and PATENT FUELS.”

Admiralty, }  
6 August 1877. }

THOS. WOLLEY,  
Chief Clerk.

(*Mr. Hussey Vivian.*)

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Ordered, by The House of Commons, to be Printed,  
6 August 1877.

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LIST of the accompanying Papers showing the RESULTS of TRIALS of COALS recently made by  
the ADMIRALTY.

Description of Coal or Patent Fuel.	Yard or Ship where Tried.	Official Number of Paper.	Date of Report.	Page
<b>I.—COAL:</b>				
Patagonian (Sandy Point) Coal - -	Her Majesty's Ship "Challenger" - -	N. S. 3437-76	*Feb. 1876	3
Australian, Japanese, Chinese, and Lavan Coal.	Her Majesty's Ships on the China Station	N. S. 2986-76	April "	4
Takasima (Japan) Coal - - -	- - ditto - - - ditto - -	N. S. 4585-76	June "	9
Middlesboro' (Messrs. Bolckow, Vaughan & Co.'s) Coal.	Her Majesty's Ship "Tourmaline" - -	N. S. 3143-76	April "	10
Globe Merthyr Steam Coal - - -	Her Majesty's Dockyard, Portsmouth -	N. S. 2847-76	June "	11
Chilian Coal - - - - -	Her Majesty's Ship "Tenedos" - -	N. S. 4331-76	July "	12
Nova Scotia (Spring Hill) - - -	Her Majesty's Ship "Bellerophon" - -	N. S. 4184-76	Aug. "	14
Roundwood Barnsley Steam Coal	Her Majesty's Dockyard, Portsmouth -	N. S. 4913-76	Aug. "	17
Longrigg Navigation Steam Coal - -	" " Portsmouth -	N. S. 4497-76	Sept. "	18
Anthracite Coals for use in yard engines	" " Chatham -	N. S. 5657-76	Nov. "	19, 20
Ditto - - - ditto - -	" " Sheerness -	N. S. 5657-76	Nov. "	20
Ditto - - - ditto - -	" " Portsmouth -	N. S. 5657-76	Nov. "	21
Ditto - - - ditto - -	" " Devonport -	N. S. 5657-76	Nov. "	22
Ditto - - - ditto - -	" " Pembroke -	N. S. 3810-77	July 1877	23
Corrwg Fechan Steam Coal - - -	" " Portsmouth -	N. S. 6107-76	Dec. 1876	24
Duffryn Merthyr - - - -	" " Portsmouth -	N. S. 545-77	Jan. 1877	25
New Zealand Coal and Fuel - -	" " Portsmouth -	{N.S. 4155-76 N.S. 1287-77}	March "	26, 27
Transvaal Republic - - - -	Analytical Report by Dr. Percy - -	{N.S. 6021-76 N.S. 1883-77}	April "	28, 29
Welsh, Australian, Scotch, West Hartley, &c.	Colonial Steamer "Victoria" (Mauritius)	N. S. 1997-77	April "	29-31
Tylor's Steam Merthyr Coal - - -	Her Majesty's Dockyard, Portsmouth -	N. S. 2966-77	June "	32
<b>II.—PATENT FUEL:</b>				
Compressed Fuel - - - - -	Her Majesty's Ship "Warrior" - -	N. S. 5469-76	June 1876	33
Ditto - - - - -	" " "Raleigh" - -	N. S. 2029-77	July "	33
Ditto - - - - -	" " "Triumph" - -	N. S. 2029-77	June "	34
Ditto - - - - -	Her Majesty's Ships of the Channel Squadron.	N. S. 3867-76	Aug. "	34-41
Ditto - - - - -	Her Majesty's Dockyard, Portsmouth -	N. S. 793-77	Feb. 1877	42-48
Ditto - - - - -	Her Majesty's Ships of the Channel Squadron.	N. S. 1781-77	March "	49-53
French Patent Fuel - - - -	Memorandum by French Marine - -	{N.S. 5792-76 N.S. 66-77}	Jan. "	54-56

\* This Report had not been received at the Admiralty when the last Return was made.

RETURN of all EXPERIMENTS made by the ADMIRALTY on COAL and PATENT FUEL since the date of the last Return, the 9th of March 1876 :—And, Copy of any CORRESPONDENCE having special reference to the Relative Value of various COALS and PATENT FUELS.

I.—C O A L.

I.—Coal.

PATAGONIAN (SANDY POINT) COAL.

Patagonian  
(Sandy Point) Coal.

REPORT of Coal Purchased at *Sandy Point*.

(N. S. 3437—76.)

Her Majesty's Ship "Challenger,"  
7 February 1876.

Sir, I HAVE the honour to inform you that, in compliance with your directions, a trial of the Patagonian coal purchased at Sandy Point was made by me during the voyage of this ship between the Straits of Magellan and the Falkland Islands.

Before entering into details regarding the properties of the fuel as a steam generator, I have to acquaint you with the fact that it was obtained from a distance not exceeding six miles from Sandy Point.

The mine is worked in the side of a hill; at its base a small stream runs, which empties itself into the sea a short distance from the anchorage at the port. This hill rises to a height of nearly 200 feet above the bed of the stream, and the seam from which the supply of coal is obtained lies embedded in its centre. The seam varies from four to five feet in thickness, and is deposited between layers of clay and shiel, with bands of shale in immediate contact with it. The coal presents much the appearance of the bituminous fuel known as caking coal; it fractures unevenly and easily, its colour does not vary, but is generally black and glistening, and there are often spots of resin distinctly visible throughout its structure. When heated it breaks into small pieces, which soon become fused into clinkers. During rapid combustion I distinctly noticed (in some of the refuse) pieces of half-consumed coal adhering to and partly embedded in the clinkers, as though they had fallen away from the fire whilst melting into the general mass.

Twenty-nine tons of Patagonian coal which had been excavated from a depth of nearly a quarter of a mile from the surface, and transported immediately by rail to the lighter, was received on board Her Majesty's Ship "Challenger" on the 17th of January last. No deterioration could therefore have occurred from exposure.

Upon the 18th of January steam was raised in three boilers for the purpose of proceeding out of harbour; one boiler was lighted with Patagonian coal, the other two with Welsh (Powell's Duffryn). At 7.30 a.m. the ship put to sea, and at 11.30 a.m. came to an anchor off Elizabeth Island. The following is the result of expenditure for the four hours:—

The starboard fore boiler burning Welsh coal, and starboard aft boiler burning Patagonian.

Fires were lighted at	Boiler.	Fires were put back at	Steam up.	Coal for laying Fires.	Coal for raising Steam.	Coal Consumed in each for 4 hours.	Amount of Ash left.
				<i>Cwts. lbs.</i>	<i>Cwts. lbs.</i>	<i>Cwts.</i>	<i>Cwts.</i>
5.30 a.m.	Starboard fore	6.25 a.m.	7.15 a.m.	7 56	7 50	15	2
5.30 a.m.	Starboard aft	6.50 a.m.	7.30 a.m.	7 10	11 0	19	1½

On Wednesday the 19th of January the fires were banked in two boilers, and the third was used for distilling purposes. Eleven tons of water were made during 12 hours with an expenditure of 40 cwt. of Patagonian coal, which left a residue of 17 per cent.



## I.—Coal.

Patagonian  
(Sandy Point) Coal.

of ash and clinker. At 12 (noon) distilling was discontinued, and all fires banked; the expenditure for banking was 39 cwt., with only a per-centage of 7·4 of ash; the ashes at all times resembled those found after burning peat.

With Welsh coal 40 cwt. would distil 14 tons of water; for banking, the result would be much the same as with the experimental fuel.

Upon the 20th January fires were spread in three boilers with Patagonian coal, and steam was raised in one hour and a-half, with an expenditure of 11 cwt. in each boiler. At 4.40 a.m. the engines were got under way, and we proceeded at 40 revolutions. For the first hour there was not much difficulty in keeping steam; at 5.50, however, the fires had clinkered considerably, and it was becoming difficult to maintain steam sufficient to keep the drag off the screw, which was occasioned by 9,580 square feet of canvas being set at the time. At 6 a.m. it became necessary to discontinue using the Patagonian coal, and to resort for a time to the Welsh. After the fires were cleaned I continued using Welsh only in two boilers, and Patagonian in the third; the result was that with a speed of 42 revolutions we used in the starboard after boiler 12·8 cwt. per hour of Patagonian coal to 4·7 cwt. of Welsh in the starboard foremost boiler. The doors under the bridges (fitted on the "Urgent" principle) were open, and air admitted at the back. The Patagonian coal burnt with an almost transparent gaseous flame, emitting little or no smoke, whilst the caking upon the fire bars was continuous.

Upon the 21st of January steam was raised in two boilers with the coal mixed in equal quantities of Welsh and Patagonian, and throughout the day this mixture was burned, with more favourable results. A speed of six knots was obtained (without assistance of sail) with a mean expenditure of 14 cwt. per hour, leaving 16 per cent. of ash and clinker only; equally favourable results were obtained on the 22nd of January. On both dates six knots were obtained with an expenditure of 14 cwt. per hour of mixed coal, and former results show that the same speed is constantly obtained with an expenditure of Welsh coal not exceeding 10 cwt. per hour.

I am therefore of opinion that, as shown by the result upon the 20th instant, it would not be advisable to use Patagonian coal alone. More particularly I think it should not be trusted to entirely where there is such uncertain and treacherous weather as is constantly met with in the Straits of Magellan.

Burnt with Welsh coal in equal quantities it would, I have no doubt, be found to answer more satisfactorily, although from the increase in consumption I do not think any material saving with regard to cost would result. Whilst laying these remarks before you, for your information upon the subject generally,

I remain, &c.

*James H. Ferguson*, Chief Engineer,  
Her Majesty's Ship "Challenger."

Captain F. T. Thomson, R.N.,  
Her Majesty's Ship "Challenger."

Australian,  
Japanese, Chinese,  
and Labuan Coal.

## AUSTRALIAN, JAPANESE, CHINESE, AND LABUAN COAL.

## CHINA STATION.

## REPORT on Coal used by Her Majesty's Ships on China Station.

(N. S. 2986—76)

Sir,

"Audacious," at Hong Kong,  
21 April 1876.

No. 186,  
1 enclosure,  
2 sub-enclosures.

I BEG to enclose a report drawn up by Mr. Charles P. Turner, chief engineer of my flag ship, on the merits of the coal supplied out here from Australia, and from the mines on this station, as compared with Welsh coal.

2. Another comparison, lately ordered by their Lordships to be instituted among certain of the coals obtained from mines on this station will follow; the questions involved are entirely distinct.

3. The result I have arrived at is, that the Australian coal is very unsuitable for certain of the vessels out here, and diminishes their efficiency to a very considerable extent; is fairly suitable for other vessels while proceeding at their ordinary speed, viz., the "most economical speed;" and unsuitable for all vessels when proceeding at higher speeds, as they would always be doing in war time.

4. I submit



4. I submit that in the case of Classes 3 and 5, comprising Her Majesty's Ships—

"Curlew,"	"Fly,"	"Dwarf,"
"Hart,"	"Growler,"	"Thistle,"
"Ringdove,"	"Lapwing,"	"Frolic,"
"Midge,"	"Hornet,"	"Kestrel,"

I.—Coal.

Australian,  
Japanese, Chinese,  
and Labuan Coal.

I be permitted in special cases, when the vessels have to cover considerable distances, or steam against the monsoon, to authorise the commanders to purchase and embark Welsh coal to the extent of two-thirds of the probable consumption, the remaining one-third to be Australian Newcastle, provided the Welsh coal is not extravagant in price (*see* proposed approximate maximum prices hereafter); and, further, that the officers in charge of depôts be authorised to purchase Welsh coal in the market, to provide for the above demands, when good opportunities offer, the amount in store not to exceed 300 tons at one time.

5. I do not propose that, unless under any special circumstances, the other classes shall be supplied otherwise than as at present.

6. With reference to the above suggestion, I may remark that Australian coal is now largely consumed in China and Japan, and that a gradual diminution in the Admiralty order would not act as a discouragement to the owners of the Australian coal mines to any appreciable extent. The existing Order regarding the consumption of Australian coal was issued for "political reasons," to encourage the collieries in Australia, an object which has been gained by the action of "supply and demand." Australian coal is to be found everywhere on this station for steamer and house consumption.

7. The following should be the approximate maximum prices to be paid for Welsh coal until further orders:—

At Singapore -	11 dollars per ton.	At Chefoo -	18 dollars per ton.
Hong Kong	14   "   "	Tientsin -	19   "   "
Amoy -	15   "   "	Nagasaki	14   "   "
Foochow -	16   "   "	Kobé -	16   "   "
Shanghai -	17   "   "	Yokohama	18   "   "

I have, &c

A. P. Ryder, Vice Admiral,

The Secretary of the Admiralty.

Commander in Chief.

Enclosure in China Station, Letter No. 186 of 1876.

Forwarding REPORTS on Coal used on China Stations.

(N. S. 2986—76.)

Sir,

Her Majesty's Ship "Audacious," at  
Hong Kong, 21 March 1876.

I HAVE the honour to enclose herewith returns showing the comparative merits of various coals used by 20 vessels on the China Station, together with a report deduced from the same, for the information of the Commander in Chief.

I have, &c.

To Captain P. H. Colomb,  
Her Majesty's Ship "Audacious."

Charles P. Turner,  
Chief Engineer.

30 March 1876.

Forwarded,

P. H. Colomb, Captain.

Sub-Enclosure No. 1, China Station, Letter No. 186 of 1876.

REPORT relative to the Value of the various kinds of Coal used on the China Station.

Her Majesty's Ship "Audacious," at  
Hong Kong, 21 March 1876.

IN drawing up a report from 20 vessels, varying from 800 horse power of the "Audacious" to 60 horse power of the "Swinger," and comprising engines of various descriptions, viz., compound, simple, with surface and ordinary jet injection condensers, it becomes necessary, in order to obtain correct results, to divide them into classes, and

## I.—Coal.

Australian,  
Japanese, Chinese,  
and Labuan Coal.

to show the gain or loss in each class, using Welsh coal as a standard. The stowage of coal in bunkers is also considered from this point.

## 2. The classification for comparison is as follows:—

Class.	NAMES of SHIPS.	Diameter of Tubes (internal).	Descriptions of Engines.
		<i>Ins.</i>	
1	"Audacious" - - - -	2½	Simple, surface condensing, twin screw.
2	"Charybdis," "Thalia," "Vigilant"	2½	Simple, jet condensers.
3	"Curlew," "Lapwing," "Ringdove"	2½ and 2½	Simple, jet condensers, twin screw.
	"Dwarf," "Fly," "Growler," "Hart"	2½, 2½, 2	
	"Hornet," "Midge," "Thistle" -	2½	
4	"Modeste," "Egeria," "Mosquito"	2½, 2½	Compound, surface condensing.
	"Swinger" - - - -	2½	Simple (expansive to compete with compound).
5	"Frolic" and "Kestrel" - -	2½	Compound, surface condensing, twin screw.

## 3. Gain or loss per cent. in consumption as compared with Welsh coal:—

CLASS.	Australian.	Japanese.	Chinese.	Labuan.
1 { Gain - - - - Loss - - - -	- - - - 1·1	3·4 —	} - not used -	- not used.
2 { Gain - - - - Loss - - - -	— 16·4	— 26·1		— 72·0
3 { Gain - - - - Loss - - - -	— 30·51	— 27·36	— 35·76	} - not used.
4 { Gain - - - - Loss - - - -	— 5·12	} - not used - {	— 38·69	
5 { Gain - - - - Loss - - - -	— 6·29		— 4·01	— 7·7

## 4. Showing the gain or loss: (A) in ashes (per cent.), (B) smoke produced, (C)\* number of hours tubes will run without being swept:—

CLASS.		AUSTRALIAN.			JAPANESE.			CHINESE.			LABUAN.			
		A.	B.	C.	A.	B.	C.	A.	B.	C.	A.	B.	C.	
1	{ Gain - - - Loss - - -	- 21·4	- 1	- 21	5·2 -	- 3	- 90	} - - not used - - -	-	-	-	-	-	-
2	{ Gain - - - Loss - - -	- 32·5	- 3·42	- 32	- 45·2	- 3·17	- 44							
3	{ Gain - - - Loss - - -	- 11·77	- 3·73	- 33·2	- 4·8	- 4·88	- 49·68	- 36·3	- 1·5	- 6	} - - - not used.	-	-	-
4	{ Gain - - - Loss - - -	- 26·7	- 1·2	- 48	} - - not used - - -	-	-	{ 60·1	-	1				
5	{ Gain - - - Loss - - -	- 54·4	- 2·1	- 174							} - - not used - - -	-	-	{ 30·5

\* The standard number for Welsh coal is, in Class 1, 186 hours; in Class 2, 140 hours; in Class 3, 90 hours; in Class 4, 96 hours; in Class 5, 240 hours.

## 5. Showing bunker capacity for stowage (approximately):—

Welsh.	Japanese.	Australian Bulli.	Australian Newcastle.
100 tons - - -	96·6 tons - -	95 tons - - -	88·3 tons.

I.—Coal.  
 Australian,  
 Japanese, Chinese,  
 and Labuan Coal.

6. From the above tabulations the following inferences, as affecting the China Squadron, may be drawn: that—

(a) In Class 1 the coal most readily procurable on the station may be burnt without causing material loss of time in passage or excess in consumption. This arises from the reserve of boiler power that can always be brought into use when working at ordinary speeds, viz., about five knots.

(b) In Class 2, with the various kinds of coal used, the time and speed remaining the same,

116·4 tons of Australian coal,  
 or 126·1 „ Japanese „  
 or 143·1 „ Chinese „  
 or 172·0 „ Labuan „

will be required to perform the work of 100 tons of ordinary Welsh steam coal.

(c) In Class 3, under similar circumstances to those detailed in the preceding paragraph,

130·5 tons of Australian coal,  
 or 127·36 „ Japanese „  
 or 135·76 „ Chinese „

will be required to equal 100 tons of Welsh.

(d) In Classes 4 and 5 the per-centage of Australian rapidly falls, as 105·12 tons and 106·29 tons represent the equivalent of 100 tons of Welsh. The Chinese, however, continues high, viz., 138·69 tons, and the vessel (“Swinger”) using this coal (Loping quality) reports that the tubes require sweeping every 50 hours.

7. Now, as Classes 2 and 3 comprise at present the larger proportion of vessels on the China Station, including all the double screw gun vessels except the “Frolic” and “Kestrel,” it follows from the above results that either vessels of this class should not in future be replaced by similar vessels, or that coal giving different results should be supplied to the depôts of the station.

8. This will further be seen from the tables of paragraph 4, where the per-centage of ash and the amount of smoke, as compared with Welsh coal, will at once account for the increased consumption, which is further made evident by the shortening of the number of hours the tubes will run without sweeping. The Bulli, or non-bituminous, requires a good draught and a large amount of grate surface, open bars, and fires touched as little as possible. Only an excess of boiler power can give this, which is rarely found in Class 3, where slice, pricker and rake are in constant requisition (*vide* Full Speed Return from Her Majesty’s Ship “Thistle,” 15th-16th June 1875). With the Australian Wallsend or Newcastle (bituminous coal), the steam is better kept, but from the same cause, viz., the absence of slow combustion, the tubes rapidly foul, and the pressure of steam falls. This is also the case with Takasima and Karatz Japanese coal.

9. It is found that Newcastle (Australian) coal can be readily burnt in the “Audacious” with Welsh, in the usual proportion of one-third Newcastle to two-thirds Welsh, and that with great advantage, if due care in the firing is exercised; and if it should be thought advisable to again introduce Welsh coal at all, or at the more southern depôts of the station, this Australian coal could replace the North Country coal usually supplied to Her Majesty’s Service.

10. A table of the results obtained by testing various kinds of coal with Thompson’s calorimeter between February 1875 and March 1876 is appended.

Charles P. Turner, Chief Engineer.



## I.—Coal.

Australian,  
Japanese, Chinese,  
and Labuan Coal.

Sub-Enclosure No. 2, China Station, Letter 186 of 1876.

## RESULTS obtained from Coal tested on board "Audacious."

DESCRIPTION OF COAL.	Date of Supply to Depôt.	Supplied to Ship.		Lbs. of Water evaporated at 212° F. by 1 lb. of Coal.
		From what Depôt.	Date.	
Australian Wallsend - - -	February 1874	Singapore -	3 Feb. 1875	13.58
Wollongong - - -	Not known -	Saigon -	20 Feb. „	11.63
Bulli - - -	June - 1874	Shanghai -	18 May „	11.71
Bulli - - -	August „	Kobé -	9 June „	13.2
Takasima - - -	Not known -	Yokohama	3 July „	12.65
Japanese Green Coal (specimen)	- -	- -	- -	9.68
Iwani - - -	- -	- -	- -	12.32
Soratz - - -	- -	- -	- -	12.65
Ikusibets - - -	- -	Contractor	- -	12.65
Karatz - - -	July - 1874	Hakodadi -	26 July 1875	13.09
Labuan (specimen) - - -	- -	Adams & Co.	- -	12.10
Australian Wallsend - - -	September 1874	Nagasaki -	16 Aug. 1875	12.65
Bulli - - -	September „	ditto -	16 Aug. „	13.42
Tsu sima (specimen) - - -	- -	- -	- -	8.8
Imari (specimen) - - -	(Supplied to "Frolic")	- -	- -	11.05
Ditto - - -	- -	- -	- -	10.69
Wollongong - - -	(Contract not known.)	Singapore -	19 Jan. 1876	13.2
Bulli - - -	December 1875	ditto -	19 Jan. „	14.63
Australian Wallsend - - -	December „	ditto -	19 Jan. „	12.54
Anvil Creek - - -	December „	(Contractor.) Manilla -	22 Feb. „	13.2
Newcastle (Australian) - - -	December „	ditto -	22 Feb. „	13.97

Charles P. Turner, Chief Engineer.



I.—Coal

Takasima  
(Japan) Coal.

## TAKASIMA (JAPAN) COAL.

## REPORT ON TAKASIMA COAL.

(N. S. 4585—76).

Her Majesty's Ship "Audacious," at Yokohama,  
5 June 1876.

Sir,

IN compliance with your order of the 1st instant to report in duplicate as to the prospects of obtaining suitable coal for Her Majesty's ships on the China station from the Takasima Coal Mines, I have the honour to submit the following information, compiled from the engine-room register of Her Majesty's Ship "Audacious," as to the qualities of that description of coal when used on board this ship.

1. The generation of steam when using Takasima coal alone was found to be good, the emission of smoke large (Admiralty, No. 4 to 5), the rate of combustion moderate; generally it was a good steaming coal, and burnt well mixed with ordinary Welsh steam coal, in the proportion of one-fourth Takasima to three-fourths Powell's Duffryn; this also would appear to be about the results obtained on trial with this description of coal tried separately, and mixed with Powell's Duffryn at the Peninsular and Oriental Steam Navigation Company's Dockyard at Hong Kong, between 29th December 1873 and 6th January 1874.

2. The quantity supplied to the ship was 250 tons, by the naval storekeeper at Yokohama, and came direct from the mines, without landing.

3. This coal was, therefore, used under favourable circumstances, and the same results might not be obtained if stored for a considerable period before issued to ships, or if remaining some time on board before being used, for the following reasons:

4. A portion of the Takasima coal on board the "Audacious" was left unused for a period of five months, to test its capability of remaining unimpaired by time, heat, motion of ship, and other incidental causes. On being tried, it was found to be entirely reduced to dust, but still retained its good steaming qualities.

5. A special preparation of grate surface was required to obtain this result; if used for the smaller classes of vessels on this station, it is very doubtful if the same results would be obtained, and I, therefore, should not consider it suitable for general use in Her Majesty's ships on this station.

I have, &amp;c.

Charles D. Turner,  
Chief Engineer.To Captain P. H. Colomb,  
Her Majesty's Ship, "Audacious."

Forwarded,

P. H. Colomb, Captain.

## REPORT ON TAKASIMA COAL.

Sir,

"Dwarf," Yokohama, 28 April 1876.

WITH reference to the 13 tons of coal purchased from the Takasima Colliery on the 7th instant, for trial, I have the honour to report as follows:

1st. Generation of steam, very good.

2nd. Emission of smoke: black, on first firing up, but soon becomes of a light colour. A great deal of smoke was prevented by opening the furnace doors for a short time, as there is no apparatus fitted for the prevention of smoke.

3rd. Rate of combustion, moderate. This coal requires to be lifted off the fire-bars occasionally to allow the draught to pass through, as it cakes very hard together when first put on the fires.

4th. Per-centage of ash and clinker: out of the 13 tons of Takasima coal taken on board, the per-centage of ash was 20; of clinker there was none.

397.

B

The

I.—Coal.  
Takasima  
(Japan) Coal.

The tubes were examined after 26 hours' steaming, and were found in a fair condition, considering that the draught plates were closed nearly the whole time, and no blast was used. The fires were not cleared out during this time.

From past and present experience of this coal, as used on board Her Majesty's Ship "Dwarf," I consider it to be of very good steaming properties, and has always given less work in the stoke-hold than any other coal, except Welsh Cardiff.

Commander Hon. E. S. Dawson,  
Her Majesty's Ship "Dwarf."

I have, &c.  
*John T. Coombs,*  
Engineer in Charge.

No. 15.

Forwarded for the information of the Commander in Chief. This coal was purchased for trial in compliance with the senior officer's orders, Nagasaki.

*E. S. Dawson,* Commander,  
and Senior Officer, Japan Division.

Middlesboro'  
(Messrs. Bolckow,  
Vaughan & Co's.)  
Coal.

### MIDDLESBORO' (MESSRS. BOLCKOW, VAUGHAN & CO'S.) COAL.

#### Forwarding REPORT of Coal used in "Tourmaline."

(N. S. 3143—76.)

Her Majesty's Ship "Pembroke, Chatham,"  
19 June 1876.

Sir,

IN accordance with your memorandum of 7th June, forwarding me a copy of a letter from Messrs. Bolckow, Vaughan & Co., and calling on me to forward a report, showing the results obtained from the coal lately used for navigating the "Tourmaline," I have the honour herewith to enclose, for your information, the report required, made by the chief engineer of Her Majesty's Ship "Tourmaline."

Vice Admiral Henry Chads,  
Commander in Chief.

I have, &c.  
*J. Clark Soady,*  
Captain of Steam Reserve.

#### COAL for Navigating Her Majesty's Ship "Tourmaline."

Sir,

Steam Reserve, Sheerness, 15 June 1876.

IN reply to memorandum, dated 7th June 1876, I have the honour to state that the coal supplied for navigating the "Tourmaline" to Sheerness appeared to be of a fair quality, and burned brightly.

It made a great amount of smoke, and we found it difficult to keep steam for more than about half speed, or an average of 75 revolutions.

The run from the Tees to Sheerness was made in 29 hours, with an expenditure of 18½ cwt. per hour, and an average of about 9 knots.

No account of the per-centage of ashes, &c., having been taken, I am unable to give a more definite report of the result obtained.

There are, however, still some 30 tons of this coal on board, should further information by experiment be required.

Captain J. C. Soady, R.N.,  
Her Majesty's Ship "Pembroke."

I have, &c.  
*Herbert Pitt,*  
Chief Engineer.

(No. 317.)

"Duncan," at Sheerness, 21 June 1876.

FORWARDED for the information of the Lords Commissioners of the Admiralty, with reference to their Secretary's letter of 6th instant, N. S. 2143—4489.

*Henry Chads,* Vice Admiral  
and Commander in Chief.

PORTSMOUTH YARD.

(N.S. 2847—76).

5th June 1876.

A STATEMENT showing the Results of Tests of "Globe Merthyr" Steam Coal.

DATE OF TRIAL.	Coals used in Trial.	Name of Coal, and from what Contractor Received.	Number of Lbs. of Water Evaporated by One Lb. of Coal, calculated from the Temperature of 100°.	Number of Lbs. of Water Evaporated per Square Foot of Fire-grate per Hour, calculated from the Temperature of 100°.	Per-centage of Clinker and Ash.			Maximum Number.	Average Number.	Per-centage of Time of no Smoke.	Number of Lbs. of Coal Burnt-per Square Foot of Fire-grate per Hour.	Deposit of Boor.	Cinders Re-burnt.	Temperature in Furnel.	Draught in Furnel.	REMARKS.
					Clinker.	Ash.	TOTAL.									
12 May 1876	10½ Cwt.	Globe Merthyr Steam Coals. "Thomas and Griffiths."	9.54	221.03	3.06	2.12	5.18	2	.48	53.6	24.17	9	36	680	½	Length of fire-grate, 4 feet; area over bridge, 186 square inches; common wrought-iron fire-bars, ¾-inch spaces; thick fire. No smoke consumers used.
13 May "	10½	- ditto - - - ditto -	9.42	212.41	3.32	2.04	5.36	2	.39	64.5	23.50	9	38	665	½	- ditto - - - ditto; thin fires.
31 May "	20	- ditto - - - ditto -	9.67	209.09	3.17	1.61	4.78	3	.44	60.2	22.13	16	72	670	½	- ditto - - - ditto; thick fire.
1 June "	10½	½ Globe Merthyr; ½ Cowpen Cambolis Hartley.	9.23	225.28	3.06	1.70	4.76	3	.44	59.8	24.70	8	35	700	½	- ditto - - - ditto; slides in furnace doors three-fourths opened alternately after each firing.
26 May "	10½	½ Globe Merthyr; ½ Cowpen Cambolis Hartley.	9.18	232.95	2.55	1.53	4.08	2	.66	35.5	26.25	8	32	698	½	- ditto - - - ditto; slides in furnace doors opened full alternately after each firing.
3 May "	10½	Cowpen Cambolis Hartley (as used in preceding trials).	8.30	251.54	1.70	1.19	2.89	3	1.51	3.3	30.82	7	26	735	½	- ditto - - - ditto; slides in furnace doors both kept fully open.

Forwarded in accordance with Admiralty Letter, 28th February 1876, N. S. (C. P. 1402.—1536).

W. B. Robinson, Chief Constructor.  
Edward Newman, for Chief Engineer on duty.

To the Admiral Superintendent.

Forwarded,

5th June 1876.

To the Secretary of the Admiralty  
(Naval Store Branch).

F. L. McClintock, Admiral Superintendent.



I.—Coal.  
Chilian Coal.

# CHILIAN COAL.

(N. S. 4331—76.)

"Tenedos" Coal from Port of Axaquete ordered to be tried by Rear Admiral  
*Cochrane.*

"Repulse," at Callao, 24 July 1876.

SUBMITTED to the Lords Commissioners of the Admiralty for their information.

No. 28<sup>3</sup>A.  
4 Enclosures.

*G. Hancock,*

The Secretary of the Admiralty.

Rear Admiral and Commander in Chief.

Enclosure No. 1. Letter from Captain Pollard as above, 7th July 1876.

- " " 2. Memorandum from Commander in Chief, dated 31st May, directing trial.  
" " 3. Letter from Senor Prado, 31st March 1876.  
" " 4. Chart showing position of Coal Mine.

Enclosure No. 1, in Pacific Letter No. 28A, of 24th July 1876.

(Original.)

TRIAL of Coal ordered by Rear Admiral *Cochrane.*

No. 1.  
Enclosures.

Sir,

"Tenedos," at Coquimbo, 7 July 1876.

I HAVE the honour to lay before you a Memorandum, dated 31st May, received last mail from Rear Admiral Cochrane, the late Commander in Chief. I enclose also the letter accompanying the Memorandum, and which letter would be made use of by the ship taking coals from the mines alluded to in the Memorandum.

2. The Memorandum orders Her Majesty's ship under my command to proceed to the port of Axaquete, and there take in 100 tons more or less of the coals there supplied "if circumstances admit of it."

I have to report that, being full of coal, which many weeks ago was taken on board, I am unable to comply with the Memorandum.

Having on May 10th received from Admiral Cochrane my sailing orders to proceed to England on arrival of "Opal," and to at once make ready, I did so, and at Caldera filled up coal, as reported in my letter of 27th May, No. 79, and the 50 tons short on arrival here were taken on board. Thus without discharging again I could not take in the coals alluded to in Memorandum, and trust the above clear explanation will be ample and conclusive.

3. As you may, Sir, be desirous of obtaining the data wished for by Admiral Cochrane, and would order a ship at the proper season to call at Laraqueta Beach to ship some, I have made every inquiry of different persons respecting this Carampanqui mine.

The mine, called Carampanqui from the small river flowing near it, is situated about eight miles from the Lota mines. It has a short railway from it to Laraqueta Beach, in Aranco Bay, and lighters load at the mouth of the Carampanqui river, which here flows into the sea.

4. There is no port as mentioned in Memorandum, but the Laraqueta Beach is open and exposed, with heavy swell always from the north. No vessel could lay there in safety if a north-west wind was blowing, and during the winter season, with north winds prevalent, it would be almost impossible to get coal there. The launches would, if forced to attempt it, be swamped from the heavy swell. In such an open exposed roadstead it would be running unnecessary risks for any of Her Majesty's ships to call at this season.

Further I would beg to mention that this roadstead is not a port mentioned in the insurance policies of this coast, and thus undoubtedly considered bad.

5. As to the coal itself I find a bad report of it from everyone I have written to or spoken to on the subject. It has been tried by some of the steamers on the coast, and the report is "very bad, weak, and dirty even for Chilú coal." It has been tried at the Serana Gas Works, and Mr. Young, the manager, writes me, "Regarding the quality of the coal it is the most inferior of Chilian coals for gas purposes."

Also a firm in Serana bought some for their steam engines, and found it very poor indeed.

From the captain and officers of the Chilian iron-clad "Almirante Cochrane," now lying here, I receive the same report, that it is some of the worst of Chilian coal, being half slate and the remainder soft and very bituminous. Captain Simpson, of "Cochrane," also states that at this time of year the launches would be swamped.

6. The price of five dollars per ton stated in late Commander in Chief's Memorandum, is far too high.

The



The best coals of Chili, those from Lota and Perchoco mines, are five dollars per ton placed alongside. Last year a vessel lay here many months with a cargo of Carampanqui coal on board, as no purchasers could be found for it.

7. It is well known to officers on the station that the best of Chilian coal is unsuited for Her Majesty's ships. It is a soft smoky coal, requiring boilers fitted with 4-inch tubes to burn it, and steam cannot be kept up with it. At a price of five dollars per ton, it is a much more expensive coal to Her Majesty's ships than good Welsh coal at 12 dollars the ton.

This fact is clearly shown by the Pacific Steam Navigation Company, who have large depôts of English and Welsh coals at different ports on this coast. Their steamers only take Chilian coal at Lota on their way out from England, being then nearly empty in bunkers.

8. In conclusion I have only to express my hope that my explanations will be considered both by yourself and the Lords Commissioners of the Admiralty as sufficient for my not calling as directed at Laraqueta Beach for the coal alluded to in the Memorandum.

Had I not been filled up I should have proceeded there, and if possible coaled, and then have proceeded homewards round Cape Horn, fearing to risk the ship under steam at this boisterous time of the year in the Straits with such coal on board.

I beg to enclose a chart of the coast, and have marked thereon the situation of the mine, and the place on Laraqueta Beach where the coals would be embarked.

I have, &c.

Rear Admiral George Hancock, &c., &c.,  
Commander in Chief.

*E. J. Pollard, Captain.*

Enclosure No. 2, in Pacific Letter, No. 28A, of 24th July 1876.

MEMORANDUM,

"Repulse," Bay of Panama, 31 May 1876.

HAVING been informed that very good Chilian coal was to be procured at the port of Axaquete, near Talcahuano, and an offer having been made, as per enclosed letter, to supply any of Her Majesty's ships with coal at five dollars per ton, it seems very advantageous that for the possible benefit of the service it should be tried on board one of Her Majesty's ships. It is my direction that, on your voyage to England from Valparaiso, you call in the "Tenedos," if circumstances admit, at the above-named port, and, if there are suitable facilities, embark 100 tons, more or less, of the said coal for trial, inasmuch as the price seems exceedingly moderate, and the quality is said to be good.

5 dollars.

100.

2. I should wish you to inform their Lordships of the result of the use of such coal, which, on account of the public interest involved, as well as of the public position of the recommender of the coal, viz., the to be President of Peru, General Prado, I shall look forward to read your report with interest, and trust you will take, as well as your chief engineer, under your instruction, all trouble in giving the coal a good trial.

3. I have to request you will confer on this subject at Valparaiso with the gentleman named in the enclosed letter, viz., Senor Carlos Van der Heyde.

Captain Edwin J. Pollard,  
H. M. Ship "Tenedos," Valparaiso.

*A. A. Cochrane, Rear Admiral and  
Commander in Chief.*

Enclosure No. 3, with Letter No. 1, of 7th July 1876.

My dear (Companion),

Panama, 31 March 1876.

IN accordance with this letter you will order the deliverance to the captain of any English man-of-war the number of tons of coal which he may require at the price of five dollars in the harbour of Axaquete.

I remain, as always, your affectionate compadre and friend,

Carlos Van der Heyde, Esq., Valparaiso.

*Prado.*

Sir,

9 September 1876.

I AM commanded by my Lords Commissioners of the Admiralty to acknowledge the receipt of a letter, dated the 24th July last (No. 28A), from Rear Admiral Hancock, enclosing a report from Captain Pollard, of H. M. S. "Tenedos," relative to the Chilian coal from the Carampanqui mines, near the port of Axaquete.

2. I am further to inform you of their Lordships' satisfaction with the trouble which Captain Pollard has evidently taken in the matter, with valuable results.

3. Captain Pollard's report confirms what was already known about Chilian coal.

Rear Admiral De Horsey,  
&c. &c. &c.,  
Pacific.

I am, &c.

*Vernon Lushington.*

I.—Coal.

## NOVA SCOTIA (SPRING HILL) COAL.

Nova Scotia  
(Spring Hill) Coal.

## REPORT on Trial of the Spring Hill Mining Company's Coal.

(N. S. 4184—76.)

"Bellerophon," at St. John's, Newfoundland,  
4 August 1876.

SUBMITTED for the information of the Lords Commissioners of the Admiralty, with reference to your letter, N. S. 3282, of the 7th August 1875, observing that I do not recommend the purchase of this coal for Her Majesty's service.

No. 182.  
3 Enclosures.

2. The pith of the report is in the Remark column, viz.: "On first starting, generated steam very rapidly, but before end of trial, the fire became so dirty, that the pressure fell from 48 lbs. to 28 lbs., the smoke box and lower part of funnel being red hot."

Whereas, with the Acadia coal, which had been deteriorating for two years: "Steam was kept easily throughout the trial at a pressure of 48 lbs."

The Secretary of the Admiralty,  
&c. &c. &c.

A. Cooper Key,  
Vice Admiral.

Enclosure No. 1, in North American and West Indian Letter, No. 182, of  
4th August 1876.

## REPORT on the Coal of the "Spring Hill Mining Company."

Her Majesty's Ship "Bellerophon," Halifax,  
29 July 1876.

Sir,

IN compliance with the order of Vice Admiral Sir Astley Cooper Key, K.C.B., F.R.S., Commander in Chief, to carry out trials of the Spring Hill Mining Company's coal with the appliances at our disposal.

1. We have the honour to report that the coal in appearance is of a laminated and granular description, much resembling a mixture of Welsh and North Country coal. During the short time this coal has been in store (from 12 to 20 days) it has broken up considerably, and the granulated portions have fallen into small particles, much the same as the Baltimore coal.

2. It gives off a very dense brown smoke, and in burning it under the boiler of the steam launch and the boiler in the factory, a great amount of heat was shown to be passing into the chimney, and although we had not the appliances for accurately testing the difference in temperature of the issuing gases when burning "Spring Hill" and the other description of coal, the bottom of the funnel and chimney showed that the heat issuing from the Spring Hill coal must have been much greater than when the other coals were being burnt. It generates steam quickly when first lighted, but the fires soon become dirty, large clinkers forming on the fire-bars, so that the fires would require to be frequently cleaned.

The "Acadia" coal, tested in comparison with the "Spring Hill" coal, has been in store two years, and is the same coal that was tested by us in 1874, shortly after being received into store, and we find that it has deteriorated considerably, but when tried in the steam launch, was found to be superior both in generating steam and keeping the fires cleaned than the Spring Hill coal under similar circumstances.

In conclusion, we beg to state that we are of opinion that the Spring Hill Mining Company's coal has no superior qualities to recommend it over that of other coals of Nova Scotia, which, from practical experience we are familiar with.

We append tables of the results of comparative trials between this and other coals in evaporative qualities, and of such chemical tests as we were able to make by the means at our disposal.

Captain Hugh Campbell,  
Her Majesty's Ship "Bellerophon."

We have, &amp;c.

Fras. C. Alton,  
Chief Engineer.  
C. Salmon,  
Engineer.

Her Majesty's Ship "Bellerophon," Halifax,  
1 August 1876.

FORWARDED for the information of the Commander in Chief.

Hugh Campbell, Captain.

## HER MAJESTY'S SHIP BELLEROPHON.—HALIFAX, 29th July 1876.

## Results of Comparative Trials of the undermentioned Coals in Boiler of Steam Launch, also Analysis of ditto.

Date when received into Store.	Description of Coal.	Time.		Coals.			Revolutions.			Per-centage of Ash, Soot, and Clinker.	REMARKS.
		Raising Steam.	Steaming from Ship to Small Island at Top of Bedford Basin, back round St. George's Island, and to Ship.	Raising Steam and waiting Orders to Commence-ment of Trial.	Steaming from Ship to Small Island at Top of Bedford Basin, back round St. George's Island, and to Ship.	TOTAL.	Mean per Minute.	Mean per Lb. of Coal.	From Ship to Small Island at Top of Bedford Basin, back round St. George's Island, and to Ship.		
		H	Hrs. m. sec.	Lbs.	Lbs.	Lbs.	No.	No.	No.		
Sample sent for trial	Spring Hill Mining Company	1 0	1 48 18	176	240	416	3189	1438	34,544	140	On first starting, generated steam very rapidly, but before end of trial the fire became so dirty that the pressure fell from 48 lbs. to 28 lbs., the smoke-box and lower part of funnel being red hot.
June 1874	Acadia	1 10	1 46 50	112	283	400	3238.9	123.5	35,532	12.0	Steam was kept easily throughout the trial at a pressure of 48 lbs.

## ANALYSIS of the Spring Hill Mining Company Coal compared with the Acadia Mine.

## COMPARATIVE RESULTS obtained by burning 17 grains of Coal in 16.439 fluid grains of Water.

Description of Coal.	Volatile Matter.	Fixed Carbon.	Ash, &c.	TOTAL.	REMARKS.		
					Description of Coal.	Number of Degrees (F.) the Water was Raised in Temperature.	Equal to Lbs. of Water raised into Steam by 1 lb. of Coal.
Spring Hill Mining Company	27.2	62.5	10.3	100	Spring Hill Mining Company	Degrees. 9	Lbs. 9
Acadia	22.24	70.61	7.15	100	Acadia	9	9
					Powell's Duffryn	9½	9½

No allowance has been made for the heat absorbed by the apparatus.

Fras. C. Alton, Chief Engineer.  
C. Salmon, Engineer.



## I.—Coal.

Nova Scotia  
(Spring Hill) Coal.

Enclosure No. 3 in North American and West Indian Letter, No. 182, of 4th August 1876.

HER MAJESTY'S SHIP BELLEROPHON.—HALIFAX, 29th July 1876.

RESULTS of Comparative Trial of the undermentioned Descriptions of Coal in Boiler of Steam Factory, Halifax Yard, to find Evaporative Power.

Data when received in Store.	Description of Coal.	Temperature of Water in Boiler when Fire was lit.	Temperature of Feed Water.	Thermometer.	Barometer.	Time.				Coal.				Water.				TOTALS.				Compared with Welsh Coal used in the Trial, and taking 100 Tons of Welsh Coal as the Standard, 100 Tons of Welsh equals	REMARKS.
						Raising Steam.	From Steam just showing Firing.	Ditto, and after Stopped Firing until Fires had burnt out.	TOTAL.	Raising Steam.	From Steam just showing Fires had burnt out.	Per Hour.	TOTAL.	Lbs. Evaporated per Lb. of Coal.	Cubic Feet Evaporated per Hour.	Evaporated until Stopped Firing.	Total Evaporated until Fire had burnt out.	Ash.	Soot.	Clinkers.	Percentage of Ash, Soot, and Clinkers.		
Sample sent for trial.	Spring Hill Mining Company.	Deg. 120	Deg. 71	Deg. 68	29.85	H. m. 0 15	H. m. 6 0	H. m. 6 37	H. m. 6 52	Lbs. 220	Lbs. 1,100	Lbs. 183.3	Lbs. 1,320	Lbs. 6.55	Cub. ft. 18.32	Cub. in. 190,093	Cub. in. 202,245	Lbs. 77	Lbs. 3	Lbs. 66	Lbs. 11.06	Tons. 118.2	{ Clinkers spread all over the bars; fires dirty at end of trial.
June 1874	Acadia	126	68	64	30.04	0 25	6 5	7 5	7 30	220	1,210	198.9	1,430	6.03	17.96	189,150	201,954	106	4	70	12.69	126.8	{ This is the same coal that was tried under the same circum- stances two years ago, and appears to have deteriorated very much.
June 1876	Powell's Duffryn	126	71	69	30.15	0 22	6 0	6 50	7 12	220	880	146.6	1,100	7.75	16.5	171,108	188,568	93	1	48	12.72	100	{ Coal fresh and in very good condition.

Fras. C. Alton, Chief Engineer.  
C. Salmon, Engineer.



PORTSMOUTH YARD.

(N.S. 4913—76.)

24th August 1876.

A STATEMENT showing the Results of Tests of Steam Coal from "Roundwood Colliery."

DATE OF TRIAL.	Coal used in Trial.	Name of Coal, and from what Contractor Received.	Number of Lbs. of Water Evaporated by One Lb. of Coal, calculated from the Temperature of 100°.	Number of Lbs. of Water Evaporated per Square Foot of Fire-grate per Hour, calculated from the Temperature of 100°.	Per-centage of Clinker and Ash.			Smoke.		Number of Lbs. of Coal Burnt per Square Foot of Fire-grate per Hour.	Deposit of Soot.	Cinders Re-burnt.	Temperature in Funnel.	Draught in Funnel.	REMARKS.
					Clinker.	Ash.	TOTAL.	Maximum Number.	Average Number.						
16 Aug. 1876	10½	Steam Coal from Roundwood Colliery, Roundwood Colliery Company.	8.79	229.43	1.70	1.53	3.23	3	2.05	26.25	8	18	770	$\frac{3}{8}$ Inch.	Length of fire-grate, 4 feet; area over bridge, 186 square inches; common wrought-iron fire bars, ¾-inch spaces; thick fires; slides in furnace doors kept fully open.
17 Aug. "	10½	- ditto - - - ditto -	8.70	218.07	1.53	1.87	3.40	3	1.64	24.70	8	20	764	$\frac{3}{8}$ "	- ditto - - - ditto; thin fires.
18 Aug. "	20	- ditto - - - ditto -	8.81	216.41	1.96	1.56	3.52	3	1.49	24.30	15	43	785	$\frac{3}{8}$ "	- ditto - - - ditto; thick fires.
19 Aug. "	10½	Hood's Merthyr; ½ Roundwood Colliery.	9.08	216.16	2.30	1.95	4.25	2	.93	24.52	8	27	691	$\frac{3}{8}$ "	- ditto - - - ditto; slides in furnace doors kept about three-fourths open.
21 Aug. "	10½	Hood's Merthyr; ½ Roundwood Colliery.	9.22	225.09	2.55	1.78	4.33	2	.51	24.17	9	29	716	$\frac{3}{8}$ "	- ditto - - - ditto; slides in furnace doors opened full alternately after each firing.
29 July "	10½	Hood's Merthyr (as used in preceding trials).	9.79	230.32	2.64	2.04	4.68	2	.57	24.17	9	36	681	$\frac{3}{8}$ "	- ditto - - - ditto; no smoke consumers used.

Forwarded in accordance with Admiralty Letter, 21st July 1876, N.S., C. P. 6036—6019.

To the Admiral Superintendent.

Forwarded,

To the Secretary of the Admiralty  
(Naval Store Branch).

W. B. Robinson, Chief Constructor.  
Wm. H. T. Steel, Chief Engineer.

24th August 1876.  
F. L. McClintock, Admiral Superintendent.

## LONGRIGG NAVIGATION STEAM COAL.

## PORTSMOUTH YARD.

(N.S. 4497—76.)

16th September 1876.

## A STATEMENT showing the Results of Tests of Longrigg Navigation Steam Coal,

DATE OF TRIAL.	Coal used in Trial.	Name of Coal, and from what Contractor Received.	Number of Lbs. of Water Evaporated by One Lb. of Coal, calculated from the Temperature of 100°.	Number of Lbs. of Water Evaporated per Square Foot of Fire-grate per Hour, calculated from the Temperature of 100°.	Per-centage of Clinker and Ash.			Smoke.		Number of Lbs. of Coal Burnt per Square Foot of Fire-grate per Hour.	Deposit of Soot.	Cinders Re-burnt.	Temperature in Furnace.	Draught in Funnel.	REMARKS.
					Clinker.	Ash.	TOTAL.	Maximum Number.	Average Number.	Per-centage of Time of no Smoke.					
30 Aug. 1876	10½ Cwts.	Longrigg Navigation Steam Coal; Jameo Nimms & Com- pany.	9.26	227.80	3.06	2.38	5.44	2	.85	28.3	8	36	710	¾	Length of fire-grate, 4 feet; area over bridge, 186 square inches; common wrought-iron fire-bars, ¼-inch spaces; thick fires; slides in furnace doors both kept fully open.
31 Aug. "	10½	- ditto - - - ditto -	9.23	223.63	3.32	2.33	5.70	2	1.34	6.4	9	38	707	¾	- ditto - - - ditto; thin fires.
1 Sept. "	20	- ditto - - - ditto -	9.25	219.12	3.43	1.92	5.40	1	.61	38.5	15	66	703	¾	- ditto - - - ditto; thick fires.
2 Sept. "	10½	½ Hood's Merthyr; ½ Long- rigg Navigation.	9.47	223.82	2.93	2.55	5.53	1	.34	65.7	9	37	691	¾	- ditto - - - ditto; slides in furnace doors kept about three-fourths open.
4 Sept. "	10½	¾ Hood's Merthyr; ¼ Long- rigg Navigation.	9.47	226.08	3.32	2.30	5.62	2	.38	62.7	9	33	681	¾	- ditto - - - ditto; slides in furnace doors kept half open.
29 July "	10½	Hood's Merthyr (as used in preceding trials).	9.79	230.32	2.64	2.04	4.68	2	.57	44.6	9	36	681	¾	- ditto - - - ditto; no smoke con- sumers used.

Forwarded in accordance with Admiralty Letter of 14th July 1876, N. S. 338—5701.

To the Admiral Superintendent.

W. B. Robinson, Chief Constructor.  
Wm. H. T. Steil, Chief Engineer.

Forwarded,

7th September 1876.

I.—Coal.

ANTHRACITE COALS.

Anthracite Coals.

COMPARATIVE TRIALS at the HOME DOCKYARDS.

(N.S. 5657—76.)

Sir, Chatham Yard, 22 November 1876.  
With reference to your minute on Controller's letter of 4th February last, N.S. 161—916, and Controller's letter of 25th July last, N.S. 3419—6113, relative to the use of Anthracite Coals for land engines, we beg to report that the following coals have been received,—Gwaun Cae Gurwen, Trimsaren, and Capel Ifan; they have been used in the boilers at Sawmills, Dock Engine House, and at Ropery. It has been found very difficult to use the Anthracite Coal alone, and in cases when the draught had to be diminished the fire became so deadened that steam could not afterwards be maintained. Mixture of Anthracite and Top Hards in varying proportions have also been tried, and it is found that when in the proportion of one-half Anthracite and one-half Top Hards the mixed coals can be effectively burnt in those boilers which have a good draught.

The result of one month's trial in each case at Dock Engine House and Ropery, in which places the work is sensibly constant, is as follows:—

DESCRIPTION.	Gross Amount of Coals per Hour.	Gross Amount of Coals per Hour.
	Dock Engine.	Ropery.
	<i>Cwts.</i>	<i>Cwts.</i>
Annesley Hards	5·72	3·73
One-half Anthracite (Gwaun Cae Gurwen, and Trimsaren), one-half Annesley Hards	5·16	3·56

The results of a series of evaporative power trials made at sawmill boiler is given in the accompanying Table, which shows that by burning a mixture of Gwaun Cae Gurwen and Annesley Hards, in proportion of half-and-half, the gain in cost of fuel is 4·45 per cent.

The Trimsaren Anthracite does not prove at all superior to the ordinary land engine coal.

By burning Capel Ifan and Annesley Hards half-and-half, a saving in cost of 10·5 per cent. is effected.

These mixtures can be burnt only in a few engine houses, and if so used 3,500 tons of Anthracite Coal could be supplied in next financial year, in lieu of 4,000 tons of ordinary land engine coal.

We have, &c.  
W. Eames, Chief Engineer.  
Jas. A. Bedbrook, Assistant to Chief Engineer.  
The Admiral Superintendent,  
&c. &c. &c.

(No. 409—23/11/76.)

Forwarded.  
Chas. Fellowes, Admiral Superintendent.



## CHATHAM YARD.

22 November 1876

A STATEMENT showing the Results of Tests of Land Engine Anthracite Coal.

DESCRIPTION OF COAL.	Name of Coal, and from what Contractor Received.	Number of Lbs. of Water evaporated by one Lb. of Coal, calculated from the Temperature of 100°.	Number of Lbs. of Water evaporated per Square Foot of Firegrate per Hour, calculated from the Temperature of 100°.	Per-centage of Clinker and Ash.			Smoke, 0 to 7.	REMARKS
				Clinker.	Ash.	Total.		
Land Engine	Gwaun Cae Gurwen Roundwood Colliery	8.45	91.3	5.6	7.05	12.65	0	See Officer's letter here
	$\frac{3}{4}$ Gwaun Cae Gurwen $\frac{1}{4}$ Annesley Hards	7.94	83.9	4.89	5.86	10.75	0.7	
	$\frac{1}{2}$ Gwaun Cae Gurwen $\frac{1}{2}$ Annesley Hards	7.93	83.8	4.02	4.97	8.99	0.5	
	Trimsaren Anthracite	7.21	78.0	6.65	11.5	18.16	0.5	
	Capel Ifan	7.88	82.7	6.13	7.94	14.07	0.3	
	$\frac{3}{4}$ Capel Ifan $\frac{1}{4}$ Annesley Hards	8.22	104.2	6.97	7.15	14.12	0.8	
	$\frac{1}{2}$ Capel Ifan $\frac{1}{2}$ Annesley Hards	8.46	103.0	7.89	4.93	12.82	1.0	
	Annesley Hards	7.29	97.5	4.31	4.29	8.60	1.0	

Forwarded with Officers' letter of this day.

W. Eames,  
Chief Engineer.Jas. A. Bedbrook,  
Assistant to Chief Engineer.

To the Admiral Superintendent.

## COALS ANTHRACITE.

## Reporting Results of Trials.

Sir,

Sheerness Yard, 15 November 1876.

WITH reference to your memoranda on Controller's Orders, N. S. 161—915, of the 4th February, and N. S. 3419—6114, of the 25th July last, directing the Anthracite Coal to be tried in competition with the coal usually supplied for Land Engines, and the results reported, I beg to report that the Abercrave and Capel Ifan Coals, above referred to, have been tried in competition with the Annesley Hards usually supplied to the yard boilers; careful tests to ascertain their evaporative powers have also been made, and the following results give a slight advantage for the Anthracite Coal, but with a large percentage of ashes:—

DESCRIPTION OF COAL.	Lbs. of Water evaporated per Lb. of Coal Consumed, calculated at the Temperature of the Feed.	Lbs. of Water evaporated per Lb. of Coal Consumed, calculated at 100° constant Temperature of the Feed.	Per-centage of		REMARKS.
			Ash.	Clinker.	
Annesley Hards - - - -	7.94	7.72	1.95	2.97	With a small quantity of light brown smoke.
Capel Ifan - - - - -	8.79	8.60	7.14	3.14	No smoke visible.
Abercrave - - - - -	9.24	9.02	9.75	4.87	- ditto.

The trials for comparative cost on which the greatest reliance can be placed, from the regular character of the work performed, have been carried out at the New Well Boilers, and during 113 days of 1,110 working hours, 20 tons 3 cwt. 2 qrs. of Abercrave Coal have



have been consumed at a cost of 17*s.* 2*d.* per ton=17*l.* 6*s.* 4*d.*, while for 113 days of an equal number of working hours, 24 tons 5 cwt. of Annesley Hard Coals have been consumed, at a cost of 14*s.* 9*d.* per ton=17*l.* 17*s.* 8*d.*, the area of fire-grate was the same on both trials, and as will be seen, the saving effected during this period is 11*s.* 4*d.* in favour of the Abercrave Coal; we have also tried the latter coal at the sawmills and fitting shop boilers, both by itself and mixed in various proportions with the Annesley Hards, but in consequence of the work not being regular we have been unable to arrive at a satisfactory conclusion as to their respective merits.

The Capel Ifan Coal has been but a short time in use, and taking into consideration its present price, viz., 18*s.* 6*d.* per ton, as well as the fact that its evaporative power is less than the Abercrave, I am unable to see that any advantage will be derived by its introduction; and further, that while the relative prices of the Abercrave and the Annesley Hard Coal remains the same as at present, I am of opinion that the interests of the service will be best met by a supply of these coals in about equal proportions.

The Captain Superintendent.

I have, &c.  
J. Paterson,  
Chief Engineer.

Forwarded.  
A. B. Sturdee,  
Chief Constructor.

Approved and forwarded.

15 November 1876.

F. A. Foley,  
Captain Superintendent.

COALS—TRIAL OF.

Sir,  
With reference to your memoranda of 6th February and 27th July, on Controller of Navy's letters of 4th February and 25th July last, N.S. 161—911 A., and N.S. 3419—6115, respectively, we have the honour to forward on the accompanying Table the results of trials of Anthracite (Pentremaur and Capel Ifan), and Annesley Coals on the yard engines here, the last column of saving per cent. being calculated on the prices given in the order above quoted, viz., 18*s.* for Annesley, and 19*s.* 6*d.* per ton for Anthracite.

No. 3140.

Boiler in which Coal was used.	Lbs. of Coal Burnt for each hour Run by the Machinery when using			Cost of Running per Hour when using		Saving of Cost per Cent. by use of	
	Annesley.	Pentremaur.		Annesley.	Pentremaur.	Annesley.	Pentremaur.
		Annesley for Lighting up.	Pentremaur.				
80 Horse-power Engine - -	528·4	11·7	370·6	50·9	40·4	-	20·6
Iron Foundry - - - -	309·7	17·8	228·4	29·8	25·4	-	14·7
South Saw Mills - - - -	229·0	34·4	156·2	22·0	19·2	-	12·7
	1,067·1	63·9	761·2	102·7	85·0	-	17·2
	Annesley.	Capel Ifan.		Annesley.	Capel Ifan.	Annesley.	Capel Ifan.
		Annesley.	Capel Ifan.				
80 Horse-power Engine - -	512·5	34·1	397·1	49·3	44·6	-	9·5
Iron Foundry - - - -	425·1	24·0	303·3	41·3	33·9	-	17·9
South Saw Mills - - - -	247·5	34·4	155·7	23·8	19·5	-	18·0
	1,185·1	92·5	856·1	114·4	98·0	-	14·3

From this it will be observed that the saving in cost per hour run by the machinery varies from 9½ to 20·6 per cent., taking the prices above mentioned; but if the prices at which the Anthracite Gwaun Cae Gurwen, James and Aubrey, and Pumpquort, served in this year be taken at 17*s.* per ton, and that of Annesley at 15*s.* 3*d.*, the saving in cost would be somewhat less.

I.—Coal.  
 Anthracite Coals.

We have also tried the different Anthracites at the yard engines shown in comparison with each other, and the results are given in Table following :

Yard Engine at which Coal was used.	Lbs. of Coal used per Hour's Run by the Machinery, obtained by dividing Total Quantity of Coal used for Steaming, Lighting up and Banking Fires, by Number of Hours Run by the Machinery of						REMARKS.
	Annesley.	Pentremaur.	Capel Ifan.	Pumpquort.	James and Aubrey.	Gwaun Cae Gurwen.	
80 Horse-power, Factory -	528.4	388.3	-	-	-	-	Full time and over-
Ditto - - ditto -	512.5	-	431.2	-	-	-	time. - ditto.
Ditto - - ditto -	-	464.7	-	490.3	455.7	469.7	- ditto - ditto.
40 Horse-power, Iron Foundry.	309.7	246.3	-	-	-	-	Full time.
Ditto - - ditto -	425.1	-	327.3	-	-	-	Short time.
Ditto - - ditto -	-	309.1	304.7	-	309.6	-	Full time.
Ditto - - ditto -	-	296.9	-	282.9	-	294.2	Full time and over-
60 Horse-power, Iron Foundry.	-	-	-	237.1	-	238.1	time.
30 Horse-power, Iron Ship-building Shop.	399.4	335.5	-	-	-	-	Full time.
Ditto - - ditto -	387.5	-	330.1	-	-	-	- ditto.
Ditto - - ditto -	-	322.4	-	316.2	328.4	315.2	- ditto.
Ditto - - ditto -	-	-	-	346.7	340.8	-	-
30 Horse-power, No. 4 Slip	179.6	155.8	-	-	-	-	Full time.
Ditto - - ditto -	202.8	-	171.8	-	-	-	Short time.
Ditto - - ditto -	-	176.3	-	176.9	176.9	184.6	Piston of engine worn.

From the above we are of opinion that either of the Anthracites named above can be used with equal advantage in point of economy of fuel, preference being given to the lowest tender.

In regard to a more extended use of Anthracite, we beg leave to state that as many of our boilers have to generate steam too quickly, and have not sufficient grate area to admit of burning Anthracite, we do not recommend a more extended use of it, and on re-considering the quantity of this coal which can be used on the yard engines, recommend that the quantity, 3,000 tons, named by us in our letter of the 22nd November 1875 as the probable annual consumption, should be reduced to 2,400 tons, the latter quantity being what we now estimate we should use in the year.

We have, &c.

Wm. H. T. Steil, Chief Engineer.

Edwd. Newman, First Assistant.

Forwarded.

F. L. M<sup>c</sup>Clintock,

Admiral Superintendent.

16 November 1876.

#### ANTHRACITE COAL.

Sir,

Keyham Yard, 14 November 1876.

WITH reference to Controller of the Navy's letter, N.S. 3419—6116, of 25th July 1876, we beg to forward herewith the average results of the tests made in the testing boiler at Keyham, of the different kinds of Anthracite Coal, together with those of the ordinary land engine coal supplied during the year.

TABLE of TESTS.

DESCRIPTION.	Lbs. of Water Evaporated by One Lb. of Coal at Temperature of 100°.	Cubic Feet of Water Evaporated per Hour at Temperature of 100°.	No. of Lbs. of Water Evaporated per Square Foot of Fire-grate per Hour calculated from Temperature of 100°.	Per-centage of			Smoke.
				Clinker.	Ash.	TOTAL.	
Wayne's Merthyr - - -	9.37	35.8275	155.025	3.0675	3.61	6.6775	Light.
Lambton Weir - - -	7.821	32.3	142.986	4.38	3.95	8.33	Black.
Russell's Black Vein - - -	9.02	30.05	134.15	3.57	4.01	7.58	Dark.
Anthracite Pumpquort - - -	8.56	28.3	126.34	3.34	5.19	8.53	Not any.
Anthracite Capel Ifan - - -	8.08	28.99	129.42	6.05	8.43	14.48	ditto.
Anthracite Abercraze - - -	8.475	24.50	109.38	6.50	7.46	13.96	ditto.
Anthracite Trimsaren - - -	8.07	27.17	121.29	5.68	9.21	14.89	ditto.

It was found necessary in burning the Anthracite to have the fire-bars at least half-an-inch apart, in order to supply sufficient air for the combustion.

It will be seen from the above Table that even in the testing boiler, the Anthracite Coal was very slow in its action, and the per-centage of ash and clinker very high; its evaporative power was higher than that of the Lambton Weir, but below that of Wayne's Merthyr or Russell's Black Vein; the rate of evaporation was also much slower.

The

The Anthracite Coal has been used in three of the boilers at Keyham, and in the boilers at the ropery for several months, and the results in each case were similar. The fire-bars were spaced from half-an-inch to five-eighths of an inch apart, but it was found impossible to burn the Anthracite Coal alone, on account of its slow burning. We tried to do with as little mixture of ordinary land engine coal as possible, so as to test fully the value of the Anthracite for yard purposes, but found that we could not do with less than about one-third Bituminous to two-thirds Anthracite. To this must be added the quantities for banking fires, raising steam, &c., for which Anthracite is entirely unsuitable. There are many boilers in the yards, such as crane boilers and the like, in which a rapid generation of steam is absolutely necessary, and for these a quick burning coal should be supplied.

Taking all the circumstances of the requirements of the yard into consideration, we are of opinion that not more than one-third the supply of land engine coal should be Anthracite, and the remainder, ordinary Bituminous Coal, as has usually been supplied.

We have, &c.

*J. Trickett,*

Chief Engineer.

*Rich. Sennett,*

for First Assistant Chief Engineer  
(Sick).

The Admiral Superintendent.

Forwarded.

The Controller of the Navy,  
15 November 1876.

*George O. Willes,*

Admiral Superintendent.

#### COMPARATIVE TRIALS OF ANTHRACITE and other Descriptions of LAND ENGINE COAL.

(N. S. 3810—77.)

Sir,

Pembroke Yard, 24 July 1877.

WITH reference to your minute of the 9th on Director of Store's letter of the 8th December last, N. S. 5657—10,272, I have the honour to report that "James and Aubrey's Own Anthracite Coal" has been tried at most of the yard engine boilers, in comparison with "Dowlais Merthyr Steam Coal" and "Ynysfaio" (a large quantity of which description is now in store from last year's contract), and the results are as follows:

DESCRIPTION OF COAL.	Number of Tests.	Mean Pressure of Steam.	Mean Tempera- ture of Feed Water taken at Feedheater.	Mean of Water Evaporated per Lb. of Coal Steaming.	Ditto for all Day.	REMARKS.
		<i>Lbs.</i>		<i>Lbs.</i>	<i>Lbs.</i>	
Anthracite - - -	7	57.4	129.8°	10.96	8.97	Showing a per-centage for all day of about 1.895 in favour of "Dowlais" Merthyr over "Anthracite," and .89 in favour of "Ynysfaio."
Dowlais Merthyr - -	6	59.6	138.53°	12.19	9.14	
Ynysfaio - - - -	5	57.66	133.37°	11.75	9.05	

2. During these trials it has been found that the Anthracite can be burnt with advantage at most of the yard boilers, but as it requires a good draught in order to burn satisfactorily, and the draught at the boilers at No. 2 Shed, Foundry, Hobb's Point, steam-hammer shop, and steam cranes, is not sufficiently strong for this purpose, it is considered that the supply of Anthracite should be limited to the quantity required for use at those boilers which have sufficient draught for burning it, which would be about half the total quantity of land engine coal consumed annually.

3. There are no means at this yard of determining the specific gravity of the coal, but a small quantity having been tried by a chemist in the town, the result is that the specific gravity is 1.1.

4. The respective contract prices of the various descriptions of coal herein referred to, are,—

	<i>s.</i>	<i>d.</i>	
Anthracite - - - - -	11	3	per ton.
Dowlais Merthyr - - - - -	12	6	"
Ynysfaio - - - - -	14	3	"

I am, &c.

*F. Martin,*

Chief Constructor.

(No. 241.)

Forwarded,

*R. V. Hamilton,*

Captain Superintendent.



## CORRWG FECHAN STEAM COAL.

## PORTSMOUTH YARD.

(N. S. 6107—76.)

8th December 1876.

## A STATEMENT showing the Results of Tests of "Corrwg Fechan" Steam Coal.

DATE OF TRIAL.	Coal used in Trial.	Name of Coal, and from what Contractor Received.	Number of Lbs. of Water Evaporated by One Lb. of Coal, calculated from the Temperature of 100°.	Number of Lbs. of Water Evaporated per Square Foot of Fire-grate per Hour, calculated from the Temperature of 100°.	Per-centage of Clinker and Ash.			Smoke.		Number of Lbs. of Coal Burnt per Square Foot of Fire-grate per Hour.	Deposit of Soot.	Cinders Re-burnt.	Temperature in Furnel.	Draught in Furnel.	REMARKS.
					Clinker.	Ash.	TOTAL.	Maximum Number.	Average Number.						
30 Nov. 1876	10½	" Corrwg Fechan;" Corrwg Fechan Coal Company.	9.64	227.81	1.36	1.53	2.89	3	.85	24.52	9	39	700	¾	Length of fire-grate, 4 feet; area over bridge, 186 square inches; common wrought-iron fire-bars, ½-inch spaces; thick fires. No smoke consumers used.
1 Dec. "	10½	- ditto - - - ditto -	9.58	228.82	1.53	1.53	3.06	3	.7	23.17	9	44	680	¾	- ditto - - - ditto; thin fires.
4 Dec. "	20	- ditto - - - ditto -	9.67	219.24	1.74	1.61	3.35	3	.77	23.13	16	83	677	¾	- ditto - - - ditto; thick fires.
5 Dec. "	10½	½ "Corrwg Fechan;" ½ Cow- pen Cambois Hartley.	9.13	232.74	1.70	1.44	3.14	3	.63	25.65	8	32	681	¾	- ditto - - - ditto; slides in furnace doors opened full alternately after each firing.
6 Dec. "	10½	¾ "Corrwg Fechan;" ¾ Cow- pen Cambois Hartley.	9.22	231.34	1.70	1.44	3.14	3	.81	24.70	9	40	690	¾	- ditto - - - ditto; slides in furnace doors three-fourths opened alternately after each firing.
6 Oct. "	10½	Cowpen Cambois Hartley (as used in preceding trials).	8.16	245.54	2.04	1.27	3.31	5	1.79	29.47	8	21	823	¾	- ditto - - - ditto; slides in furnace doors both kept fully open.

Forwarded in accordance with Admiralty Letter (Superintendent of Stores), 30th October 1876, N. S. 5338—8969.

W. B. Robinson, Chief Constructor.  
Wm. H. T. Steel, Chief Engineer.

To the Admiral Superintendent.

Forwarded.

8th December 1876.



## A STATEMENT showing the Results of Tests of "Duffryn Merthyr" Coal.

DATE OF TRIAL.	Coal used in Trial.	Name of Coal, and from what Contractor Received.	Number of Lbs. of Water Evaporated by One Lb. of Coal, calculated from the Temperature of 100°.	Number of Lbs. of Water Evaporated per Square Foot of Fire-grate per Hour, calculated from the Temperature of 100°.	Per-centage of Clinker and Ash.			Smoke.			Number of Lbs. of Coal Burnt per Square Foot of Fire-grate per Hour.	Deposit of Soot.	Cylinders Re-burnt.	Temperature in Furnel.	Draught in Furnel.	REMARKS.
					Clinker.	Ash.	TOTAL.	Maximum Number.	Average Number.	Per-centage of Time of no Smoke.						
17 Jan. 1877	10½	"Duffryn Merthyr"; Lynvi Tondra and Ogmore Coal and Iron Company.	9.61	221.80	1.70	1.53	3.23	4	1.59	16.1	23.86	8	36	695	Inch. ¾	Length of fire-grate, 4 feet; area over bridge, 186 square inches; common wrought-iron fire-bars, ½-inch spaces. No smoke consumers used; thick fires.
18 Jan. "	10½	- ditto - - - ditto -	9.70	223.82	1.53	1.78	3.31	3	.76	42.8	23.01	8	40	686	¾	- ditto - slides in furnace doors opened full alternately after each firing; thin fires.
19 Jan. "	10½	- ditto - - - ditto -	9.72	225.70	1.53	1.61	3.14	3	.83	41.6	23.01	8	36	695	¾	- ditto - - - ditto; thick fires.
22 Jan. "	20	- ditto - - - ditto -	9.61	220.15	1.78	1.61	3.39	3	.8	42.9	23.13	15	82	690	¾	- ditto - - - ditto - ditto.
Jan. "	10½	½ Duffryn Merthyr; ½ Cowpen Cambolds Hartley.	9.24	238.31	1.78	1.44	3.22	3	1.03	30.	24.89	8	32	711	¾	- ditto - slides in furnace doors both kept fully open; thick fires.
24 Jan. "	10½	½ Duffryn Merthyr; ½ Cowpen Cambolds Hartley.	9.41	233.57	1.70	1.53	3.23	3	.87	36.2	24.00	8	35	702	¾	- ditto - - - ditto.
29 Jan. "	10½	Cowpen Cambolds Hartley (as used in preceding trials).	8.28	248.69	1.87	1.61	3.48	3	1.37	2.92	30.54	7	38	797	¾	- ditto - - - ditto.

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Forwarded in accordance with Admiralty Letter (Superintendent of Stores), 27th October 1876, N. S., C. P. 9007—8897.

W. B. Robinson, Chief Constructor.  
Wm. H. T. Steil, Chief Engineer.

To the Admiral Superintendent.

Forwarded,

27th January 1877.

To the Secretary of the Admiralty  
(Naval Store Branch).

F. L. McClintock, Admiral Superintendent.

## NEW ZEALAND COAL.

## PORTSMOUTH YARD.

(N. S. 4155—76.)

17th August 1876.

## A STATEMENT showing the Results of Tests of Land Fuel made from New Zealand Coal.

DATE OF T R I A L.	Fuel used in Trial.	Name of Fuel, and from what Contractor Received.	Number of Lbs. of Water Evaporated by One Lib. of Fuel, calculated from the Temperature of 100°.	Number of Lbs. of Water Evaporated per Square Foot of Fire-grate per Hour, calculated from the Temperature of 100°.	Per-centage of Clinker and Ash.			Smoke.			Number of Lbs. of Fuel Burnt per Square Foot of Fire-grate per Hour.	Deposit of Soot.	Cinders Re-burnt.	Temperature in Furnel.	Draught in Furnel.	REMARKS.
					Clinker.	Ash.	TOTAL.	Maximum Number.	Average Number.	Per-centage of Time of no Smoke.						
11 Aug. 1876	<i>Cwts.</i> 10½	Compressed fuel made from New Zealand Coal by the Diamond Fuel Company.	6.68	247.38	1.19	2.89	4.08	3	1.86	-	44.80	8	43	810	½	Length of fire-grate = 4 feet; area over bridge = 186 square inches; common wrought-iron fire-bars, ½-inch spaces; thick fires. Slides in furnace doors both kept fully open.
12 Aug. "	10½	- ditto - - - ditto	6.71	247.38	1.03	3.15	4.17	2	1.27	-	40.48	7	48	800	½	- ditto - - - ditto; thin fires.
14 Aug. "	20	- ditto - - - ditto	6.71	238.54	1.34	2.23	3.57	3	1.68	-	39.38	13	82	807	½	- ditto - - - ditto - ditto.

Forwarded in accordance with Admiralty Letter, 29th July 1876, N. S. 3725—6215.

W. B. Robinson, Chief Constructor.  
Wm. H. T. Steel, Chief Engineer.

To the Admiral Superintendent.

Forwarded,

17th August 1876.

A STATEMENT showing the Results of Tests of "New Zealand" Coal.

DATE OF T R I A L.	Coal used in Trial	Name of Coal, and from what Contractor Received.	Number of Lbs. of Water Evaporated by One Lb. of Coal, calculated from the Temperature of 100°.	Number of Lbs. of Water Evaporated per Square Foot of Fire-grate per Hour, calculated from the Temperature of 100°.	Per-centage of Clinker and Ash.			Smoke.			Number of Lbs. of Coal Burnt per Square Foot of Fire-grate per Hour.	Deposit of Soot.	Cinders Re-burnt.	Temperature in Furnel.	Draught in Furnel.	REMARKS.
					Clinker.	Ash.	TOTAL.	Maximum Number.	Average Number.	Per-centage of Time of no Smoke.						
16 Feb. 1877	10½ Cwts.	"Waikato" coal from New Zealand; New Zealand Coal Company (hand picked).	5.44	223.43	1.87	2.98	4.85	4	3.26	-	56.95	8	113	780	¾ Inch.	Length of fire-grate = 4 feet; area over bridge = 186 square inches; common wrought-iron fire-bars, ¾-inch spaces; thin fires; slides in furnace doors both kept fully open. In this trial the coal used was hand picked, and all the stones detected placed on one side; 66 lbs. stone being picked out in weighing the 10½ cwt.
20 Feb. "	20	- ditto - - - ditto (used as supplied).	5.35	182.71	4.55	2.32	6.87	3	.97	33.9	39.38	15	196	776	¾	- ditto - - - ditto; spaces between bars ¾-inch; fall slides in furnace doors kept about three-fourths open; coals used as supplied.
21 Feb. "	20	- ditto - - - ditto	5.52	128.97	4.37	2.45	6.82	3	.71	50.	29.54	15	228	586	¾	- ditto - - - ditto; damper in funnel partly closed.
22 Feb. "	20	½ ditto - - - ditto, ½ Fothergill's Aberdare.	7.55	223.40	3.57	1.78	5.35	3	.74	47.5	30.00	14	46	759	¾	- ditto - - - damper in funnel wide open; slides in furnace doors three-fourths open alternately after each firing; thick fires; "Waikato" coal used as supplied. Fothergill's Aberdare, hand picked.
21 Oct. 1876	10½	Fothergill's Aberdare (hand picked), (as used in preceding trial).	9.58	222.64	2.12	1.87	3.99	3	.82	42.9	24.17	8	38	702	¾	- ditto - - - ditto; no smoke consumers used; ¾-inch spaces between bars; coal hand picked.

Forwarded in accordance with Admiralty Letter (Director of Stores) 20th December 1876, N. S. 6058—10,617.

W. B. Robinson, Chief Constructor.  
Wm. H. T. Steel, Chief Engineer.

7th March 1877.

To the Admiral Superintendent.

Forwarded,

To the Secretary of the Admiralty  
(Naval Store Branch).

Chas. L. Waddilove, for Admiral Superintendent.



## I.—Coal.

South African  
(Transvaal) Coal.

## SOUTH AFRICAN (TRANSVAAL) COAL.

(N. S. 6021—76.)

Sir,

Downing-street, 2 December 1876.

I AM directed by the Earl of Carnarvon to send herewith a box, containing specimens of coal\* collected by Mr. F. Oats, during a journey which he has recently made in the Transvaal Republic.

Lord Carnarvon would be glad to be furnished by their Lordships with an opinion upon the quality of the coal, if one can be given upon the specimens sent.

I am, &amp;c.

W. R. Malcolm.

The Secretary to the Admiralty.

Sir,

15 December 1876.

I AM commanded by my Lords Commissioners of the Admiralty to transmit herewith specimens of coal and magnetic iron ore, which have been collected by Mr. F. Oats in the Transvaal Republic, together with a copy of a letter from the Colonial Office respecting them, and I am to acquaint you that my Lords would feel obliged if you would favour them with your opinion respecting this coal and iron, after you have tested the specimens.

I am, &amp;c.

Robert Hall.

Dr. John Percy, F.R.S.,  
School of Mines, Jermyn-street.

(N. S. 1883—77).

Sir,

House of Commons, 11 April 1877.

I HAVE now pleasure in communicating to you the results of my examination of the coal and iron ore from the Transvaal Republic, which you forwarded to me for that purpose on the 15th December 1876.

\* \* \* \* \*

Composition of the Coal.							Per Cent.
Carbon	-	-	-	-	-	-	52·35
Hydrogen	-	-	-	-	-	-	3·02
Oxygen (inclusive of nitrogen)	-	-	-	-	-	-	9·41
Sulphur	-	-	-	-	-	-	1·78
Water	-	-	-	-	-	-	4·72
Ash (greyish white)	-	-	-	-	-	-	28·72
							100·00

By heating the powdered coal to bright redness in a closed vessel, the following results were obtained:

	Per Cent.
Carbonaceous residue	73·30
Volatile products, inclusive of 4·72 per cent. of water	26·70
	100·00

The gases evolved during the process burnt with a slightly smoky flame, and the residue was non-coherent.

The large proportion of ash would greatly lessen the commercial value and limit the use of this coal.

*Iron Ores.*

A.—This is magnetic oxide of iron, or magnetite. It is not only magnetic but polar, and is, in fact, the true natural "loadstone." Its fracture is coarsely granular; it contains 52·89 per cent. of metallic iron, exclusive of oxide of titanium, which it also contains in sensible proportion.

B.—This is also magnetic iron ore, like the preceding; its fracture is finely granular; it contains 51·99 per cent. of metallic iron.

Both kinds of ore are suitable for smelting, under suitable conditions as to fuel, labour, carriage, demand, &c.

I have, &amp;c.

John Percy.

Secretary of the Admiralty,  
&c. &c. &c.

\* Also two magnetic iron ore specimens, from the Valley of the Steelpont River, Transvaal, South Africa.



Sir,

18 April 1877.

I.—Coal.

With reference to your letter of the 2nd December last, forwarding a box, containing specimens of coal from the Transvaal Republic, and requesting to be furnished with their Lordships' opinion as to the quality of the coal, I am commanded by my Lords Commissioners of the Admiralty to acquaint you that the sample of coal sent was too small for trial in any other way than by analysis, and it was accordingly sent to Dr. Percy, with a request that he would favour their Lordships with his opinion thereon.

2. A copy of Dr. Percy's analytical report is forwarded herewith for the information of the Earl of Carnarvon.

The Under Secretary of State for  
the Colonies, Colonial Office.

I am, &c.  
Robert Hall.

South African  
(Transvaal) Coal.

# WELSH, AUSTRALIAN, SCOTCH, WEST HARTLEY, &c., COAL.

Welsh, Australian,  
Scotch, West  
Hartley, &c., Coal.

(N. S. 1997—77.)

Crown Agents for the Colonies Office,  
Downing-street, London, 17 April 1877.

Sir,

THE attention of the Government of Mauritius has been recently called to the importance of arriving at a sound conclusion on the subject of the nature of coal best adapted for use in the Colony for marine purposes, and Sir Penrose Julyan, in his recent report on the civil establishment of the Colony has pointed out, inasmuch as freight forms a large proportion of the cost of coal in Mauritius, and is the same for good as for bad coal, it would seem desirable to decide the question by submitting it to the practical test of experiment by the results of which the Storekeeper General might be guided when arranging for future supplies.

2. Acting upon this suggestion, the Government of Mauritius has caused experiments to be made on board the colonial steamer "Victoria"; the results of these experiments, inasmuch as they are considered to prove, in the opinion of the Local Committee, the superiority of Scotch coal for marine purposes, seem to the Crown agents so entirely opposed to the experience of all large consumers of coal, both in this country and abroad, that they cannot but feel some hesitation in recommending the Secretary of State to accept the conclusions laid down in the report. They would therefore feel much obliged if you would furnish them with the conclusions at which the Lords Commissioners of the Admiralty may have been led to arrive in the course of the investigations which have been made in connection with this question, and with any records of experiments, or other evidence which may enable them to judge of the correctness of the views expressed in the Report of the Mauritius Committee, of which I enclose a copy.

I have, &c.  
M. F. Ommaney.

The Secretary of the Admiralty,  
&c. &c. &c.

## TRIALS of various Steam Coals in the Boilers of Government Steamer "Victoria."

### REPORT.

IN compliance with Memorandum, Account 251, of 24th November last, we have the honour to report that, for the purpose of ascertaining "what kind of coal" is most suitable for the Port "Department, with reference to paragraph No. 360 of Sir P. Julyan's report," we have conducted experiments upon the Government steamer "Victoria," with five different kinds of coals. The detailed and comparative results are contained in the annexed Table.

Per Memorandum  
Account 251, of  
24 November 1875.

1. We would remark, generally, that the whole of the experiments were made under almost precisely similar circumstances as to wind, weather, and current, and over nearly the same measured distance; the results obtained may therefore be considered reliable.

2. It will be found from the Table of Results annexed, that, arranged in the orders of economy of consumption, the coals gave the following results:—

Cardiff	-	-	-	-	-	1 (Best).
Sydney, New South Wales	-	-	-	-	-	2
West Hartley	-	-	-	-	-	3
Lambton, New South Wales	-	-	-	-	-	4
Scotch	-	-	-	-	-	5

## 1.—Coal.

3. Taking the per-centage of ashes formed from the same quantity of fuel used, the specimens take the following order, or the very reverse:—

Welsh, Australian,  
Scotch, West  
Hartley, &c., Coal.

Scotch	-	-	-	-	-	1 (i.e., formed least ash).
Lambton, New South Wales	-	-	-	-	-	2
West Hartley	-	-	-	-	-	3
Sydney, New South Wales	-	-	-	-	-	4
Cardiff	-	-	-	-	-	5

4. For maintaining a regular supply of steam at a certain pressure (10 lbs. per square inch), the samples gave the following results:—

Lambton, New South Wales	-	-	-	-	1 (Best Steaming).
West Hartley	-	-	-	-	2
Scotch	-	-	-	-	3
Sydney, New South Wales	-	-	-	-	4
Cardiff	-	-	-	-	5

5. Comparing the cost per ton of the coals here they take the following order:—

Scotch	-	-	-	-	-	1 (i.e., the Cheapest).
West Hartley	-	-	-	-	-	2
Cardiff	-	-	-	-	-	3
Sydney	-	-	-	-	-	4
Lambton	-	-	-	-	-	5

We are therefore of opinion that on the score of economical consumption, free steaming qualities, comparative freedom from ashes, and lowness of price, the Scotch coal takes the first place, and West Hartley or Newcastle coal the second. A judicious mixture of these two kinds of coal, in a proportion of one-third West Hartley to two-thirds Scotch, would very probably give excellent results.

No direct experiments were carried out upon the railway, as it has long been known by one of the members of this committee that Australian (Lambton) and South Yorkshire are the most suitable and economical for the engines upon this railway. Cardiff is unsuitable from its intense heat and quantity of ash formed. Scotch is not mechanically strong enough to resist the intense blast.

The Hon. Acting Colonial Secretary,  
&c. &c. &c.

M. Connal,

Surveyor General, President.

W. H. Scott, Engineer and Manager of Railways.  
C. M. Dejoux, Storekeeper General.  
J. Morgan, Harbour Master.

## GOVERNMENT STEAMER "VICTORIA."

Date	26 Jan. 1876	10 Feb. 1876	17 Feb. 1876	8 March 1876	28 March 1876
Coal	Scotch.	Sydney, N.S.W.	West Hartley.	Cardiff.	Lambton, N.S.W.
Coal consumed	T. c. q. lbs. 10 0 0 0	T. c. q. lbs. 8 13 0 24	T. c. q. lbs. 8 15 2 24	T. c. q. lbs. 9 10 0 0	T. c. q. lbs. 9 7 0 16
Ashes	2,526 lbs.	4,653 lbs.	3,982 lbs.	7,129 lbs.	3,931 lbs.
Ashes, per-centage	11.2 per cent.	24. per cent.	20.4 per cent.	33.6 per cent.	16.1 per cent.
Fire lighted	5 a.m.	4 a.m.	5 a.m.	2 a.m.	4 a.m.
Steam up	6½ a.m.	6¾ a.m.	6½ a.m.	5 a.m.	6.30 a.m.
Started	7.52 a.m.	8 a.m.	7.48 a.m.	7.50 a.m.	7.50 a.m.
Miles	53	56½	57½	55½	51½
Average speed of vessel	6.4	5.9	6.31	5.17	5.5
Average speed of engine	17	15.3	17.5	14.5	18.1
Average pressure	9½ lbs.	9 lbs.	9.3 lbs.	8.3 lbs.	10 lbs.
Average consumption per hour	2,909 lbs.	2,004 lbs.	2,139 lbs.	1,964 lbs.	2,395 lbs.
Average horse-power per hour	19.3	13.36	14.26	13.09	15.9

26 January 1876.—Sea smooth. Slight breeze from S.W. Turned opposite "Jacotet Bay." Machinery stiff after repairs. Steamed freely.

10 February 1876.—Wind from S.W. on outward journey. Turned at 1 p.m. opposite "Bilombre Sugar-house."

17 February 1876.—Wind S.E. Long swell. Turned at 12.45.

8 March 1876.—Wind S.E. Fine day. Turned at 1.30.

Gentlemen,

28 April 1877.

I.—Coal.

REFERRING to your letter of the 17th instant, transmitting statement of the results of the trials of various steam coals on board the "Victoria," at the Mauritius, and requesting their Lordships' opinion thereon, I am commanded by my Lords Commissioners of the Admiralty to acquaint you that, in the absence of a drawing of the boilers of the "Victoria," my Lords are unable to say what is the description of fuel most suitable for that vessel, but it would appear from the takes of trial that the draught is not strong.

Welsh, Australian,  
Scotch, West  
Hartley, &c., Coal.

2. As, however, it is not possible that the boiler can be so constructed as not to burn North Country, it would appear that a mixture of one part Cowpen Hartley (North Country) coal, and one part Cardiff (Welsh) coal would be found most suitable for an ordinarily constructed boiler.

3. I am also to add that the consumption of fuel on board the "Victoria," as given in the Tables referred to, appears enormous, considering the low speed attained (viz., 22 to 32 tons of coal per day with a speed of only  $5\frac{1}{2}$  to  $6\frac{1}{2}$  knots per hour), and the inference is that the coal tried was of indifferent quality.

\* \* \* \* \*

I am, &amp;c.

*Robert Hall.*

Crown Agents for the Colonies,  
Downing-street, S.W.



**TYLOR'S STEAM MERTHYR COAL.**

**PORTSMOUTH YARD.**

(N. S. 2966—77).

6th June 1877.

A STATEMENT showing the Results of Tests of "Tylor's Steam" Coal.

Coal used in Trial.	DATE OF TRIAL.	Name of Coal, and from what Contractor Received.	Number of Lbs. of Water Evaporated by One Lb. of Coal, calculated from the Temperature of 100°.	Number of Lbs. of Water Evaporated per Square Foot of Fire-grate per Hour, calculated from the Temperature of 100°.	Per-centage of Clinker and Ash.			Smoke.			Number of Lbs. of Coal Burnt per Square Foot of Fire-grate per Hour.	Deposit of Soot.	Cinders Re-burnt.	Temperature in Furnel.	Draught in Furnel.	REMARKS.
					Clinker.	Ash.	TOTAL.	Maximum Number.	Average.	Per-centage of Time of no smoke.						
10½	28 May 1877	Tylor's Steam Merthyr -	9.92	232.95	1.95	1.70	3.65	3	.88	46.9	23.66	9	48	644	Inch.	Length of fire-grate, 4 feet; area over bridge = 186 square inches; common wrought-iron fire-bars, ½-inch spaces; No smoke consumers used; thick fires.
10½	29 May "	- ditto - - - ditto -	9.86	224.90	2.21	1.87	4.08	3	.87	62.7	23.01	9	48	635	"	- ditto - - - ditto; thin fires.
20	30 May "	- ditto - - - ditto -	9.92	231.52	1.92	1.74	3.66	3	.83	48.3	24.23	16	78	669	"	- ditto - - - ditto; thick fires.
10½	31 May "	‡ Tylor's Steam Merthyr; † Cowpen Cambolis Hartley.	9.46	236.64	2.30	1.70	4.00	4	.83	57.5	24.35	9	39	693	"	- ditto - - - ditto; slides in furnace-doors about three-fourths open alternately after each firing.
10½	1 June "	‡ Tylor's Steam Merthyr; † Cowpen Cambolis Hartley.	9.23	244.87	2.38	1.61	3.99	4	.93	52.5	26.67	8	36	713	"	- ditto - - - ditto; slides in furnace-doors both kept about three-fourths open.
10½	17 May "	Cowpen Cambolis Hartley (as used in preceding trials).	8.22	240.90	1.53	1.44	2.97	4	2.27	7.25	29.73	8	90	754	"	- ditto - - - ditto; slides in furnace-doors both kept fully open.

Forwarded in accordance with Admiralty Letter (Director of Stores), 10th May 1877, N. S. 1998—3968.

To the Admiral Superintendent.

W. B. Robinson, Chief Constructor.  
J. Bannister, for Chief Engineer.

To the Secretary of the Admiralty  
(Naval Store Branch).

Forwarded,

6th June 1877.



II.—P A T E N T F U E L.

COMPRESSED FUEL.

(N. S. 5469—76.)

Her Majesty's Ship "Warrior,"  
30 June 1876.

REPORT ON PATENT FUEL.

Date of being brought into use for Trial.	Names of Articles.	Points in which they differ from other Articles or Fitments of a similar kind in use before.	Opinion of their comparative Advantages or Demerits.	
17 June 1876	Patent Fuel - -	None in use before -	Generation of steam -	Good.
			Emission of smoke -	Dark brown.
			Rate of combustion. -	Sluggish; requires great draught; leaves large amount of soot, &c.

W. H. Whyte, Commanding Officer.

(N. S. 2029—77.)

PATENT FUEL ON TRIAL.

Her Majesty's Ship "Raleigh," Besika Bay,  
16 July 1876.

No. 4.

Sir,  
I BEG to forward herewith a special report on the patent fuel recently supplied to this ship at Portsmouth for trial.

2. I have little doubt but what the question of stowage could be surmounted, and even possibly this point could be established in its favour. Two days before this ship arrived at Malta I had 50 tons of the patent fuel taken out of the bunkers and stacked in the fore-stokehole; and this form of fuel is most advantageous when ships have to carry an extra supply for special service.

3. By the means adopted it was possible to conduct the trials with great accuracy, the same conditions existing when the fuel and coal were being burnt, and the same number of fires and boilers being used. It was very evident that nothing approaching full speed could have been sustained for more than a very short time when using this fuel.

I have, &c.  
G. Tryon, Captain.

Vice Admiral the Hon.  
Sir James R. Drummond, K.C.B.,  
Commander in Chief.

Her Majesty's Ship "Raleigh,"  
15 July 1876.

REPORT on the undermentioned Articles, Inventions, or Alterations relating to Naval Stores or Ordnance Stores under Trial in Her Majesty's Ship "Raleigh."

Date of being brought into use for Trial.	Names of Articles, Inventions, or Alterations. Add the Inventor's Name.	Opinion of their comparative Advantages or Demerits. State also distinctly any Change there may be, from time to time, in the Opinion of the respective Officers.
11 July 1876	Patent Fuel, 237 tons -	Using patent fuel alone it would be impossible to maintain full power for two hours, owing to the large accumulation of clinker, &c., viz., 21·8 per cent., the bricks being taken whole and only broken in front of the fires before using. Its evaporative power is also very low, being 6·1 lbs. per indicated horse-power per hour for a continuous steaming of 32 hours, at a steady indicated horse-power of 572 per hour. The stowage is not so advantageous in this ship (owing to the narrow space between verticals and beams) as it would be where large rectangular bunkers are available. In comparison with coal received at Malta, 8th July, using one-third Cowpen Hartley and two-thirds Powell's Duffryn, steaming under the same circumstances and for the same period of time, the percentage of ash and clinker was 15, and the evaporative power 4·4 lbs. per horse-power per hour, using an average of 657 indicated horse-power.

G. Tryon, Captain.  
Rd. Biddle, Chief Engineer.

## II.—Patent Fuel.

## Compressed Fuel.

Her Majesty's Ship "Triumph,"  
30 June 1876.

REPORT on the undermentioned Articles, Inventions, or Alterations relating to Naval Stores or Ordnance Stores under Trial in Her Majesty's Ship "Triumph."

Date of being brought into use for Trial.	Names of Articles, Inventions, or Alterations. — Add the Inventor's Name.	Points in which they differ from other Articles or Fitments of a similar kind in use before.	Opinion of their comparative Advantages or Demerits. — State also distinctly any Change there may be, from time to time, in the Opinion of the respective Officers.
27 Oct. 1875	Star Compressed Fuel - (No name given.)	The fuel being in square blocks and compressed, more can be stowed as compared with ordinary coal, but it takes longer to coal ship, as it has to be stowed carefully.	The fuel burns well with a strong draught, but after about six hours a large quantity of clinker is formed, which impedes the free burning of the fires, and the ash and clinker is large in proportion to coal, being about 16 to 20 per cent.

G. H. Parkin, Captain,  
Commanding Officer.

## REPORT of TRIALS with EXPERIMENTAL FUELS in CHANNEL SQUADRON.

(N. S. 3867-76.)

"Minotaur" at Portsmouth, 1 August 1876.

No. 274.

SUBMITTED for the information of the Lords Commissioners of the Admiralty with reference to your letter, N. S. 2623-4723, of 30 June 1875, observing that I fully concur in the remarks made by the Inspector of Machinery attached to the squadron under my command.

F. Beauchamp Seymour,  
Rear Admiral.

To the Secretary of the Admiralty.

## TRIALS with the "Crown" and "Star" Preserved Fuels and Mixed Coal.

Her Majesty's Ship "Minotaur,"  
Portsmouth, 1 August 1876.

Sir,

IN compliance with your directions I have examined the reports of trials made in Her Majesty's Ships "Black Prince," "Sultan," "Resistance," and "Lively," with the "Crown" Preserved Fuel and Mixed Coal, and in Her Majesty's Ships "Monarch" and "Triumph" with "Star" Preserved Fuel and Mixed Coal. With a view to ready comparison I have made a general abstract of them, which I have the honour to forward for your information.

I beg leave to observe that I do not consider the fuel supplied to be of sufficiently good quality for use in Her Majesty's Ships; it produces a large amount of small clinker and ash, which cannot be used again.

It cannot be taken on board and stowed in the bunkers, as at present arranged, with such facility as ordinary coal.

It affords greater convenience for stowing an extra stock than ordinary coal.

The dust from the Preserved Fuel has been found to affect the eyes of the men working in the coal-bunkers far more than that from the Government mixture.

I have, &c.

Rear Admiral  
F. Beauchamp P. Seymour, C.B.,  
Commanding Channel Squadron.

R. Sampson,  
Inspector of Machinery, Channel Squadron.

II.—Patent Fuel.

Compressed Fuel.

“Minotaur” at Portsmouth, 15 October 1875.

## GENERAL MEMORANDUM, No. 193.

1. WITH reference to my General Memorandum, No. 190, of 12th July last, ordering trials of Compressed Fuel, and memorandum relative to the use of the same in the French Navy, promulgated in my Memorandum of 11th ultimo, the respective captains of Her Majesty's Ships in the Channel Squadron will each receive herewith a copy of remarks which have been prepared by the Crown Preserved Coal Company respecting the burning of their fuel.

2. The Company have informed the Lords Commissioners of the Admiralty that these instructions are the result of practical information obtained from the officers of different vessels on various tropical stations, and are drawn up with a view to ensure, as far as possible, the fair treatment of the fuel, and the best return for the consumer and the Company respectively.

3. With reference to the 5th paragraph of the remarks, junk axes for breaking the fuel have been ordered to be supplied from Portsmouth and Devonport Dockyards.

4. In the trials of the fuel the following directions are to be carefully observed:

1st. Full particulars of the performance of the fuel are to be noted in the engine-room registers, from which a report of the trials can be drawn up.

2nd. Indicator diagrams are to be taken as often as necessary to ensure the true mean pressure being arrived at for calculating the indicated horse-power. The “fuel used per indicated horse-power per hour” should be the mean of that used whilst the engines continue under the same circumstances as when the diagram was taken, and not that for the particular hour in which it was actually taken, from which it is obvious that when the speed of the engines is altered it will be necessary to take more diagrams.

3rd. The smoke numbers are to be recorded on the forms (H. No. 462), supplies of which are to be demanded, and it is to be particularly noted in what manner the slides for admitting air at the back of the bridges are worked.

4th. It is recommended that the fuel should be broken up for use into pieces of rather more than a pound weight; if it is found necessary to depart from this weight the fact is to be stated in the register.

5th. Care must be taken in ascertaining the amount of ash and clinker, in order that the per centage may be accurately determined, and the weight of ash, soot, and clinker thrown overboard, after the fires are drawn, is also to be carefully noted.

6th. When the fuel is used, mixed with coal in the various proportions directed by paragraph 5, General Memorandum, No. 190, of 12th July last, all the foregoing rules are to be carefully observed, as also when coal is used alone for comparison with the fuel.

*F. Beauchamp Seymour,*  
Rear Admiral.

The Rear Admiral  
Second in Command, and respective Captains of  
Her Majesty's Ships under my Orders.



## ABSTRACT of REPORTS of TRIALS with "Crown" Preserved Fuel and Mixed C

SHIP'S NAME.	TRIAL.		WIND.		SEA.	SAIL.	Average Indicated Horse Power.	FUEL.  Description Used.
	Date of.	Duration in Hours.	Force of.	Direction relative to Ship.	State of.	Average Number of Square Feet Set.		
"Black Prince" -	28-30 Nov. 1875	48	3 to 4	Quarter - - -	Swell - - -	27,451	498.0	Crown Preserved Fuel
"Resistance" -	20-21 Nov. 1875	17	2 to 4	Quarter - - -	Smooth - - -	25,049	328.62	Crown Preserved Fuel
Ditto - -	22 Nov. - "	4	5	Aft - - -	- ditto - - -	26,385	1,791.13	- - ditto -
Ditto - -	20-21 Dec. "	8	3	3½ points on bow -	- ditto - - -	nil -	282.51	- - ditto -
Ditto - -	21-26 Jan. 1876	48	1 to 3	Abeam - - -	- ditto - - -	29,000	312.86	- - ditto -
Ditto - -	26-27 Jan. "	13	0	Calm - - -	- ditto - - -	nil -	125.05	- - ditto -
Ditto - -	27-29 Jan. "	41	1 to 6	4 points on bow -	Moderate - - -	6,000	261.44	- - ditto -
Ditto - -	27-28 Feb. "	6	1	Calm - - -	Smooth - - -	nil -	110.04	- - ditto -
Ditto - -	2 April - "	6	8	3½ points on bow -	- ditto - - -	9,000	261.93	- - ditto -
Ditto - -	3 June - "	17	3 to 7	Bow and quarter -	- ditto - - -	nil -	318.11	- - ditto -
Results combined -		160	0 to 7	Various - - -	- ditto - - -	21,237	318.10	- - ditto -
"Sultan" - -	13 Nov. - 1875	9	4 to 8	Bow - - -	Moderate swell to rough.	nil -	869.70	Crown Preserved Fuel
Ditto - - -	14 Nov. - "	4	6 to 8	ditto - - -	Rough - - -	nil -	not stated	- - ditto -
Ditto - - -	15 Nov. - "	14	2 to 6	ditto - - -	Moderate - - -	9,684	1032.00	- - ditto -
Ditto - - -	16 Nov. - "	11	3 to 6	ditto - - -	- ditto - - -	10,181	1047.00	- - ditto -
Ditto - - * S.	20 Dec. - "	4	2 to 4	ditto - - -	Heavy swell -	nil -	632.80	- - ditto -
Results combined -		42	2 to 8	ditto - - -	Moderate to rough.	9,902	955.80	- - ditto -
"Lively" - -	12-16 Mar. 1876	88.5	3 to 9	Ahead, port bow, and starboard beam.	Slight swell to very rough.	nil -	375.84	Crown Preserved Fuel
Ditto - - -	3 June - "	4.6	5 to 6	Starboard bow and ahead.	Rough - - -	nil -	363.84	- - ditto -
Ditto - - -	8-11 June "	45.13	5 to 7	Starboard quarter, starboard bow, and ahead.	Rough swell -	nil -	387.84	- - ditto -
Results combined -		138.23	3 to 9	Various - - -	Slight swell to very rough.	nil -	379.35	- - ditto -
"Black Prince" -	25-26 May 1876	12	2 to 3	Beam - - -	Swell - - -	26,597	113.0	½ Crown Fuel and ½ Government Mixture
"Resistance" -	26 Feb. - 1876	6	1	7 points on bow -	Smooth - - -	22,054	109.64	½ Crown Fuel and ½ Government Mixture
"Sultan" - -	16 Nov. - 1875	5	3 to 5	Bow - - -	Moderate - - -	9,187	1125.0	½ Crown Fuel and ½ Government Mixture
Ditto - - -	17 Nov. - "	12	3 to 6	ditto - - -	Moderate swell	12,381	906.0	- - ditto -
Ditto - - -	17 Nov. - "	10	5 to 3	ditto - - -	- ditto - - -	12,381	1065.8	- - ditto -
Ditto - - -	18 Nov. - "	12	1 to 3	ditto - - -	Moderate - - -	18,121	904.4	- - ditto -
Ditto - - -	18 Nov. - "	11	1 to 5	ditto - - -	- ditto - - -	24,998	316.7	- - ditto -
Ditto - - -	19 Nov. - "	9	1	Various - - -	Smooth - - -	26,136	664.7	- - ditto -
Ditto - - -	20 Nov. - "	4	2 to 5	Bow - - -	Moderate swell	7,363	788.6	- - ditto -
Ditto - - * S.	21 Dec. - "	4	2	Ahead - - -	Cross swell -	nil -	438.7	- - ditto -
Results combined -		67	1 to 5	Bow and ahead -	Smooth to cross swell.	17,591	781.8	- - ditto -
"Black Prince" -	2 April - 1876	12	3 to 4	Bow - - -	Smooth - - -	13,371	207.0	½ Crown Fuel and ½ Government Mixture
"Resistance" -	26 Feb. - 1876	6	2	Quarter - - -	Smooth - - -	30,930	80.56	½ Crown Fuel and ½ Government Mixture
Ditto - - -	2 June - "	22	1 to 4	Ahead and astern -	- ditto - - -	nil -	444.96	- - ditto -
Results combined -		28	1 to 4	Various - - -	- ditto - - -	30,930	366.87	- - ditto -

\* The Trials marked S. were special; the others took place in the ordinary course of cruising.



## Her Majesty's Ships "Black Prince," "Resistance," "Sultan," and "Lively."

FUEL				Distance Run				Per-centage of Ash and Clinker.	Smoke Numbers.		REMARKS.
Consumption				During Trial.		Per Ton of Fuel.					
For Distance Logged during Trial.											
Steam Alone.	Steam and Sail.	Per Indicated Horse Power per Hour.	Per Square Foot of Grate per Hour.	Steam alone.	Steam and Sail.	Steam alone.	Steam and Sail.		Maximum.	Average.	
Tons.	Tons.	Lbs.	Lbs.	Knots.	Knots.	Knots.	Knots.				
nil -	59.4	5.5	8.88	nil -	370.6	nil -	6.2	21.6	- not stated -		Fire-bars from $\frac{5}{8}$ in. to $\frac{3}{4}$ in. apart.
0.66	8.19	3.63	6.37	2.0	107.0	3.00	13.06	16.88	- not stated -		Fire-bars $\frac{5}{8}$ in. apart. Smoke slides shut.
nil -	15.75	4.92	23.52	- nil -	42.7	nil -	2.71	not stated	- ditto -	- ditto -	{ This formed part of the full-power trial at sea. } - ditto.
7.90	- nil -	5.78	7.86	37.5	nil -	4.74	nil -	16.45	- ditto -	- ditto -	- ditto.
15.40	11.60	4.60	6.95	70.0	84.8	4.54	7.31	9.28	- ditto -	- ditto -	- ditto.
7.80	- nil -	10.74	7.16	42.6	nil -	5.46	nil -	not stated	- ditto -	- ditto -	- ditto.
18.35	3.70	4.72	6.58	111.3	48.4	6.06	13.08	12.15	- ditto -	- ditto -	- ditto.
3.00	- nil -	10.17	9.95	19.8	nil -	6.60	nil -	25.00	- ditto -	- ditto -	- ditto.
nil -	4.20	5.98	8.36	- nil -	24.8	nil -	5.9	21.42	2	.499	- ditto -
12.75	- nil -	5.28	8.96	57.8	nil -	4.53	nil -	17.62	2	.749	- ditto -
65.86	43.44	5.04	7.68	341.0	307.7	5.17	7.08	13.75	2	.688	
5.225	- nil -	4.35	9.44	34.8	nil -	2.28	nil -	7.00	3	1.3	Fire-bars from $\frac{1}{2}$ in. to $\frac{5}{16}$ in. apart.
8.10	- nil -	not stated	11.30	13.0	nil -	1.60	nil -	22.00	- night -	- ditto -	- ditto.
2.80	19.4	4.99	12.83	45.1	63.4	3.52	3.26	18.9	3	1.4	- ditto -
8.00	18.7	5.19	13.54	21.9	59.1	2.73	3.16	not stated	3	1.3	- ditto -
5.80	- nil -	5.13	8.09	20.5	nil -	3.53	nil -	22.8	2	1.1	- ditto -
9.925	38.1	4.91	11.69	135.8	122.5	2.71	3.21	16.34	3	1.3	
5.4	- nil -	5.7	17.03	714.4	nil -	8.36	nil -	11.86	4	3	Fire-bars $\frac{3}{4}$ in. apart. Smoke slides shut.
2.6	- nil -	3.4	11.25	41.0	nil -	15.80	nil -	10.20	4	3	- ditto -
4.35	- nil -	4.4	15.14	395.32	nil -	11.50	nil -	12.90	4	3	- ditto -
2.35	- nil -	5.22	16.22	1,150.72	nil -	9.40	nil -	15.03	4	3	
nil -	6.0	10.8	3.28	- nil -	41.0	nil -	6.8	11.8	- not stated -		Fire-bars from $\frac{5}{8}$ in. to $\frac{3}{4}$ in. apart.
nil -	3.25	11.0	10.78	- nil -	18.6	nil -	5.72	16.9	2	.65	Fire-bars $\frac{5}{8}$ in. apart. Smoke slides shut.
9.15	2.15	4.49	12.61	21.3	6.0	2.32	2.79	18.3	- night -		Fire-bars from $\frac{1}{2}$ in. to $\frac{5}{16}$ in. apart.
9.55	8.65	5.81	13.11	47.7	21.5	2.43	2.48	not stated	3	1.4	- ditto -
5.30	23.60	6.07	12.90	14.0	57.1	2.64	2.41	18.0	3	1.6	- ditto -
4.20	7.20	6.48	11.68	66.3	17.0	2.73	2.36	not stated	3	1.6	- ditto -
nil -	11.40	7.32	5.78	- nil -	76.3	nil -	6.69	23.8	3	1.4	- ditto -
5.95	1.35	6.47	10.63	56.0	6.0	3.51	4.44	21.6	3	1.3	- ditto -
2.00	5.15	5.07	9.97	12.25	13.3	6.12	2.58	48.0	3	1.4	- ditto -
5.25	- nil -	6.70	7.32	19.70	nil -	3.75	nil -	10.2	- night -		- ditto -
1.40	59.50	6.02	10.72	237.25	197.2	2.91	3.31	22.33	3	1.46	
nil -	10.20	6.80	6.82	- nil -	46.8	nil -	4.5	9.8	- not stated -		Fire-bars from $\frac{5}{8}$ in. to $\frac{3}{4}$ in. apart.
nil -	2.35	10.88	7.79	- nil -	23.8	nil -	10.12	23.4	2	.38	Fire-bars $\frac{5}{8}$ in. apart. Smoke slides shut.
19.5	- nil -	4.46	9.50	70.4	nil -	3.61	nil -	14.34	3	1.166	- ditto -
19.5	2.35	4.76	9.13	70.4	23.8	3.61	10.12	16.28	3	1.05	

ABSTRACT of Reports of Trials with "Crown" Preserved Fuel and Mixed Coal

SHIP'S NAME.	TRIAL.		WIND.		SEA.	SAIL.	Average Indicated Horse Power.	FUEL.  Description Used.
	Date of.	Duration in Hours.	Force of.	Direction relative to Ship.	State of.	Average Number of Square Feet Set.		
"Sultan" - * S.	21 Dec. - 1875	4	3	Bow - - -	Cross swell - -	nil -	543.4	$\frac{1}{2}$ Crown Fuel and $\frac{1}{2}$ Government Mixture.
"Black Prince" -	5-6 April 1876	12	1	Ahead - - -	Smooth - - -	nil -	250.0	$\frac{1}{2}$ Crown Fuel and $\frac{1}{2}$ Government Mixture.
"Resistance" -	27 Feb. - 1876	6	2	Quarter - - -	Smooth - - -	nil -	120.02	$\frac{1}{2}$ Crown Fuel and $\frac{1}{2}$ Government Mixture.
"Sultan" - * S.	21 Dec. - 1875	4	2	Bow - - -	Cross swell - -	nil -	495.9	$\frac{1}{2}$ Crown Fuel and $\frac{1}{2}$ Government Mixture.
"Lively" - -	15-16 Jan. 1876	24	7 to 8	Ahead - - -	Very rough - -	nil -	411.7	$\frac{1}{2}$ Crown Fuel and $\frac{1}{2}$ Ocean Merthyr.
Ditto - - -	18-19 Jan. "	30.2	2 to 3	Port beam - - -	Slight swell - -	nil -	554.4	- - ditto - -
Ditto - - -	25 Jan. - "	13.4	1	Port bow and port quarter.	- ditto - - -	nil -	540.88	- - ditto - -
Results combined -		67.6	8 to 1	Various - - -	Slight swell to very rough.	nil -	501.05	- - ditto -
"Black Prince" -	29 Mar. to 1 April 1876.	72.0	3	Beam and bow -	Smooth, and slight swell.	19,765	210.0	$\frac{2}{3}$ Welsh and $\frac{1}{3}$ North Country.
"Resistance" -	27 Feb. - 1876	6.0	2	Beam - - -	Smooth - - -	18,612	101.96	$\frac{2}{3}$ Welsh and $\frac{1}{3}$ North Country.
Ditto - - -	2 April - "	6.0	3	3 points on bow -	- ditto - - -	22,221	265.52	- - ditto - -
Results combined -		12.0	2 to 3	Beam to 3 points on bow.	- ditto - - -	20,416	183.74	- - ditto - -
"Sultan" - * S.	22 Dec. - 1876	4	2	Ahead - - -	Cross swell - -	nil -	546.8	$\frac{2}{3}$ Welsh and $\frac{1}{3}$ North Country.

FROM the above the following Particulars are collected. - - -

DESCRIPTION OF FUEL USED.	Consumption per Indicated Horse-power per Hour.				Consumption per Square Foot of Grate per Hour.			
	Black Prince.	Resistance.	Sultan.	Lively.	Black Prince.	Resistance.	Sultan.	Lively.
Crown Preserved Fuel - - -	Lbs. 5.5	Lbs. 5.04	Lbs. 4.91	Lbs. 5.22	Lbs. 3.88	Lbs. 7.68	Lbs. 11.69	Lbs. 16.22
$\frac{2}{3}$ Crown Fuel and $\frac{1}{3}$ Government Mixture -	10.8	11.00	6.02	- nil -	3.28	10.78	10.72	- nil -
$\frac{1}{2}$ Crown Fuel and $\frac{1}{2}$ Government Mixture -	6.8	4.76	4.79	- nil -	6.82	9.13	6.48	- nil -
$\frac{1}{3}$ Crown Fuel and $\frac{2}{3}$ Government Mixture -	7.1	8.86	5.87	6.3	6.42	9.45	7.25	17.55
$\frac{2}{3}$ Welsh and $\frac{1}{3}$ North Country - - -	8.0	8.19	5.68	- nil -	8.05	8.80	7.74	- nil -

\* The Trials marked S. were special ; the others took place in the ordinary course of cruising.

Her Majesty's Ships "Black Prince," "Resistance," "Sultan," and "Lively"—*continued.*

FUEL.				Distance Run				Per-centage of Ash and Clinker.	Smoke Numbers.		REMARKS.
Consumption				During Trial.		Per Ton of Fuel.			Maximum.	Average.	
For Distance Logged during Trial.		Per Indicated Hors <sup>e</sup> Power per Hour.	Per Square Foot of Grate per Hour.	Steam alone.	Steam and Sail.	Steam alone.	Steam and Sail.				
Steam alone.	Steam and Sail.										
Tons.	Tons.	Lbs.	Lbs.	Knots.	Knots.	Knots.	Knots.				
4.65	- nil -	4.79	6.48	19.7	nil -	4.23	nil -	19.2	2	1.2	Fire-bars from $\frac{1}{2}$ in. to $\frac{2}{16}$ in. apart.
9.6	- nil -	7.10	6.42	49.6	nil -	5.10	nil -	8.4	- not stated -		Fire-bars from $\frac{5}{8}$ in. to $\frac{3}{4}$ in. apart.
2.85	- nil -	8.86	9.45	21.3	nil -	7.47	nil -	17.54	4	1.236	Fire-bars $\frac{5}{8}$ in. apart. Smoke slides shut.
5.2	- nil -	5.87	7.25	19.1	nil -	3.67	nil -	17.6	3	1.2	Fire-bars from $\frac{1}{2}$ in. to $\frac{2}{16}$ in. apart.
33.6	- nil -	7.6	18.58	153.3	nil -	4.56	nil -	11.8	3	2.5	Fire-bars $\frac{3}{4}$ in. apart. Smoke slides shut.
44.3	- nil -	5.9	16.85	318.5	nil -	7.18	nil -	13.0	3	2.5	- - - ditto - - - ditto.
17.5	- nil -	5.3	17.33	143.8	nil -	8.21	nil -	10.0	3	2.5	- - - ditto - - - ditto.
95.4	- nil -	6.3	17.56	615.6	nil -	6.45	nil -	11.97	3	2.5	
11.7	36.2	8.0	8.05	36.7	276.6	3.1	7.6	7.4	- not stated -		Fire-bars from $\frac{5}{8}$ in. to $\frac{3}{4}$ in. apart.
nil -	3.0	10.93	9.95	- nil -	18.0	nil -	6.0	30.0	- not stated -		Fire-bars $\frac{5}{8}$ in. apart. Smoke slides shut.
nil -	3.85	5.41	7.56	- nil -	25.6	nil -	6.64	16.88	2	.902	- - - ditto - - - ditto.
nil -	6.85	8.19	8.80	- nil -	43.6	nil -	6.32	23.44	2	.902	
5.55	- nil -	5.68	7.74	20.0	nil -	3.6	nil -	15.2	- - night -		Fire-bars from $\frac{1}{2}$ in. to $\frac{2}{16}$ in. apart.

FROM the above the following Particulars are collected.

Per-centage of Ash and Clinker.				Distance per Ton of Fuel.							
				Steam alone.				Steam and Sail.			
Black Prince.	Resistance.	Sultan.	Lively.	Black Prince.	Resistance.	Sultan.	Lively.	Black Prince.	Resistance.	Sultan.	Lively.
				Knots.	Knots.	Knots.	Knots.	Knots.	Knots.	Knots.	Knots.
21.6	13.75	16.34	15.03	- nil -	5.17	2.71	9.40	6.2	7.08	3.21	- nil.
11.8	16.9	22.33	- nil -	- nil -	- nil -	2.91	- nil -	6.8	5.72	3.31	- nil.
9.8	16.28	19.20	- nil -	- nil -	3.61	4.23	- nil -	4.5	10.12	- nil -	- nil.
8.4	17.54	17.60	11.97	5.1	7.47	3.67	6.45	- nil -	- nil -	- nil -	- nil.
7.4	23.44	15.20	- nil -	3.1	- nil -	3.60	- nil -	7.6	6.32	- nil -	- nil.

R. Sampson,  
Inspector of Machinery, Channel Squadron.



ABSTRACT of REPORTS of TRIALS with "Star" Preserved Fuel and

SHIP'S NAME.	TRIAL.		WIND.		SEA.	SAIL.	Average Indicated Horse Power.	FUEL -  Description Used.
	Date of.	Duration in Hours.	Force of.	Direction relative to Ship.	State of.	Average Number of Square Feet Set.		
"Monarch" - - Ditto - * S. Results combined - - -	27-28 Nov. 1875 27 Jan. - 1876 - - -	22.95 8.00 30.95	4 to 5 2 2 to 5	Quarter - - - Beam - - - Quarter and beam -	Rough - - - Chopping - - - Rough and chop- ping.	13,995 nil - 13,995	1,002.0 566.0 889.3	Star Preserved Fuel - ditto - - - - ditto - - -
"Triumph" - - Ditto - - Ditto - - Ditto - * S. Ditto - * S. Ditto - - Ditto - - Ditto - - Ditto - - Ditto - - Ditto - - Ditto - - Results combined - - -	29 Nov. to 1 Dec. 1875. 1 Dec. - 1875 1-2 Dec. - " 20 Dec. - " 27 Jan. - 1876 25 Feb. - " 26 Feb. - " 27 Feb. - " 28 Feb. - " 28 Feb. - " 1-3 April " - - -	42.26 2.50 12.00 4.00 8.00 16.00 24.00 24.00 10.50 2.50 28.00 181.76	5 to 1 3 3 2 1 to 2 3 to 5 1 to 3 1 to 3 1 to 2 1 2 to 4 1 to 5	Astern, starboard, and port quarters. Various - - - Port beam and various Port bow - - - Port and starboard beam Port beam, starboard, and port bow. Various - - - Port and starboard bow, and starboard beam. Port bow and beam - Various - - - Port bow - - - Various - - -	Rough, heavy swell, swell and smooth. Smooth - - - Smooth - - - Heavy swell on starboard beam. Smooth - - - Moderate - - - Moderate and smooth. Smooth - - - Smooth - - - Smooth - - - Moderate - - - Smooth and mo- derate.	23,231 nil - 11,064 nil - nil - 21,666 17,818 22,363 nil - nil - 13,754 19,082	509.74 720.8 418.53 617.0 427.4 124.28 188.36 182.66 181.07 349.57 292.25 327.2	Star Preserved Fuel - ditto - - - - ditto - - - - ditto - - - - ditto - - - - ditto - - - - ditto - - - - ditto - - - - ditto - - - - ditto - - - - ditto - - - - ditto - - - - ditto - - -
"Monarch" - - "Triumph" - * S. "Monarch" - - "Triumph" - * S. "Monarch" - - "Triumph" - * S. "Monarch" - * S. "Triumph" - * S. Ditto - * S. Results combined - - -	29 Dec. 1875 to 1 Jan. 1876. 21 Dec. - 1875 23-26 Jan. 1876 21 Dec. - 1875 26 Feb. - 1876 21 Dec. - 1875 24 Feb. - 1876 22 Dec. - 1875 24 Feb. - 1876 - - -	87.20 4.00 71.15 4.00 14.00 4.00 7.916 4.00 8.00 12.00	2 2 2 to 3 3 1 to 2 2 1 2 to 4 0 to 1 0 to 4	Bow - - - Port bow - - - Bow - - - Port bow - - - Beam - - - Port bow - - - Beam - - - Port bow - - - Ahead - - - Calm and port quarter Ahead, calm, and port quarter.	Smooth - - - Heavy swell on starboard beam. Smooth - - - Heavy swell on starboard beam. Smooth - - - Heavy swell on starboard beam. Smooth - - - Heavy swell on starboard beam. Smooth - - - Heavy swell on starboard beam and smooth.	6,826 nil - 9,502 nil - 10,600 nil - nil - nil - nil - nil - nil -	1,800.7 485.76 237.0 529.93 287.10 559.45 700.7 528.5 353.4 411.7	$\frac{2}{3}$ Star Fuel and $\frac{1}{3}$ Go- vernment Mixture. $\frac{2}{3}$ Star Fuel and $\frac{1}{3}$ Go- vernment Mixture. $\frac{1}{2}$ Star Fuel and $\frac{1}{2}$ Go- vernment Mixture. $\frac{1}{2}$ Star Fuel and $\frac{1}{2}$ Go- vernment Mixture. $\frac{1}{2}$ Star Fuel and $\frac{2}{3}$ Go- vernment Mixture. $\frac{1}{2}$ Star Fuel and $\frac{2}{3}$ Go- vernment Mixture. $\frac{2}{3}$ Welsh and $\frac{1}{3}$ North Country. ditto - ditto - ditto - ditto -

FROM the above the following Particulars are collected. - - - - -

DESCRIPTION OF FUEL USED.	Consumption per Indicated Horse-power per Hour.		Consumption per Square Foot of Grate per Hour.	
	Monarch.	Triumph.	Monarch.	Triumph.
	Lbs.	Lbs.	Lbs.	Lbs.
Star Preserved Fuel - - - - -	3.80	4.77	7.75	6.32
$\frac{2}{3}$ Star Fuel and $\frac{1}{3}$ Government Mixture - - -	3.65	5.30	12.10	10.84
$\frac{1}{2}$ Star Fuel and $\frac{1}{2}$ Government Mixture - - -	6.62	4.96	5.92	11.08
$\frac{1}{3}$ Star Fuel and $\frac{2}{3}$ Government Mixture - - -	5.29	4.65	4.91	10.98
$\frac{2}{3}$ Welsh and $\frac{1}{3}$ North Country - - - - -	3.21	4.89	5.45	8.48

\* The Trials marked S. were special ; the others took place in the ordinary course of cruising.



## Mixed Coal in Her Majesty's Ships "Monarch" and "Triumph."

FUEL.				Distance Run.				Per-centage of Ash and Clinker.	Smoke Numbers.		REMARKS.
Consumption.				During Trial.		Per Ton of Fuel.			Maximum.	Average.	
For Distance Logged during Trial.	Steam Alone.	Steam and Sail.	Per Indicated Horse-power per Hour.	Per Square Foot of Grate per Hour.	Steam alone.	Steam and Sail.	Steam alone.				
Tons.	Tons.	Lbs.	Lbs.	Knots.	Knots.	Knots.	Knots.	Per cent.			
7.55	27.9	3.45	7.80	22.5	144.1	2.98	5.16	22.0	3	0.708	Fire-bars $\frac{7}{8}$ in. apart.
1.25	nil	5.56	7.64	39.6	nil	3.52	nil	17.7	3	0.854	ditto.
8.80	27.9	3.80	7.75	62.1	144.1	3.30	5.16	20.8	3	0.731	
2.025	39.825	4.48	7.14	14.5	278.0	7.16	6.98	18.49	-	not stated	Fire-bars $\frac{1}{2}$ in. apart. Smoke doors $\frac{1}{2}$ open.
3.725	nil	4.72	9.56	15.7	nil	4.21	nil	19.12	-	ditto	ditto.
5.675	5.90	5.16	7.06	25.0	26.1	4.40	4.42	17.80	-	ditto	ditto.
4.45	nil	4.03	10.49	21.0	nil	4.79	nil	29.25	3	1.25	ditto.
6.55	nil	4.29	7.72	41.4	nil	6.32	nil	21.7	4	0.86	ditto.
1	5.50	8.20	4.29	nil	54.1	nil	9.8	-	-	not stated	ditto.
1	10.25	5.37	4.27	nil	73.9	nil	7.2	-	3	1.08	ditto.
9.65	2.40	6.31	4.99	52.7	15.1	5.46	6.29	17.27	-	not stated	ditto.
5.90	nil	6.85	5.29	34.7	nil	5.88	nil	-	3	0.79	ditto.
2.55	nil	6.53	6.41	17.0	nil	6.66	nil	-	4	1.21	ditto.
3.15	19.35	6.21	7.61	16.2	92.55	5.14	4.78	15.4	4	1.06	ditto.
3.075	83.225	4.77	6.32	238.2	539.75	5.45	6.48	17.83	4		
6.75	59.55	3.65	12.10	514.4	185.9	2.61	3.12	16.02	5	1.61	Fire-bars $\frac{7}{8}$ in. apart.
4.6	nil	5.3	10.84	20.5	nil	4.456	nil	17.61	3	1.60	Fire-bars $\frac{1}{2}$ in. apart. Smoke doors $\frac{1}{2}$ open.
5.4	34.95	6.62	5.92	89.4	188.9	3.51	5.4	13.0	3	1.08	Fire-bars $\frac{7}{8}$ in. apart.
4.7	nil	4.96	11.08	20.2	nil	4.297	nil	15.58	3	1.35	Fire-bars $\frac{1}{2}$ in. apart. Smoke doors $\frac{1}{2}$ open.
1	9.5	5.29	4.91	nil	49.7	nil	5.23	10.6	-	not stated	Fire-bars $\frac{7}{8}$ in. apart.
4.65	nil	4.65	10.96	19.8	nil	4.258	nil	12.0	3	1.47	Fire-bars $\frac{1}{2}$ in. apart. Smoke doors $\frac{1}{2}$ open for 2 hours and $\frac{2}{3}$ open for 2 hours.
7.95	nil	3.21	5.45	39.0	nil	4.905	nil	8.8	2	.583	Fire-bars $\frac{7}{8}$ in. apart.
4.80	nil	5.08	11.31	20.0	nil	4.166	nil	10.0	5	2.18	Fire-bars $\frac{1}{2}$ in. apart. Smoke doors wide open.
6.00	nil	4.75	7.07	40.0	nil	6.66	nil	8.7	4	1.18	Fire-bars $\frac{1}{2}$ in. apart. Smoke doors $\frac{1}{2}$ open.
0.80	nil	4.89	8.48	60.0	nil	5.55	nil	9.13	5	1.90	

FROM the above the following Particulars are collected.

Per-centage of Ash and Clinker.		Distance per Ton of Fuel.			
		Steam Alone.		Steam and Sail.	
Monarch.	Triumph.	Monarch.	Triumph.	Monarch.	Triumph.
Per cent.	Per cent.	Knots.	Knots.	Knots.	Knots.
20.80	17.83	3.30	5.45	5.16	6.48
16.02	17.61	2.61	4.456	3.12	nil.
13.00	15.58	3.51	4.297	5.40	nil.
10.60	12.00	nil	4.258	5.23	nil.
8.80	9.13	4.905	5.55	nil	nil.

R. Sampson,  
Inspector of Machinery, Channel Squadron.

## II.—Patent Fuel.

## Compressed Fuel.

(N. S. 793—77.)

## PATENT FUELS, REPORT ON.

No. 582.

Sir,

Portsmouth Yard, 9 February 1877.

WITH reference to your memorandum of 13th on Superintendent of Store's letter of 11th January 1875, N. S. 5135-75-231,

6 Enclosures.

We have the honour to report that the various samples of patent fuels submitted by the manufacturers named in your memorandum of 29th, on Director of Contract's letter of 28th January 1875, C. P., 647—754, and others to whom permission has since been given, have been tried in the coal testing boiler, and the results are appended in a tabulated form (H., No. 76\*), to this letter.

Two trials of each sample have been made, a quantity of 10½ cwts. being used in the first, and 20 cwts. in the second series.

In proposing this series of trials we suggested that each manufacturer should be asked to submit a sample of fuel made from a high class coal (Nixon's) in order to see how the results compared with each other, and ascertain if any advantage would be gained by stipulating more or less for the quality of coal to be used in making the fuel. These samples give in each case a higher result than the corresponding sample of ordinary make, but not to an extent that makes it necessary, in our opinion, to place any restriction in this direction beyond that which the standard we shall propose will exert.

The results obtained from the other series of samples, those submitted by the manufacturers as their ordinary make of fuel, we consider so generally satisfactory, realising or approaching in most cases so nearly the average result obtained from good steam coal, that we consider it unnecessary to refer to them in any detail.

The few exceptions are apparent on the return, but abundant evidence is afforded that there would be no difficulty in obtaining patent fuel of very good quality from most of the manufacturers, both as regards the amount and rate of evaporation.

A standard of quality deduced from the results now obtained, after making some allowance for these samples being somewhat more carefully prepared than a larger quantity would be, is all that is necessary, since the coal testing boilers at the different yards would yield different results, a general standard would not be practicable, but the object desired would be even better secured by five tons, made under a large contract, being sent on approval before the bulk was manufactured or delivered.

Taking 9½ lbs. of water evaporated per lb. of fuel, and 220 lbs. per hour for each square foot of fire grate as the average result in the Portsmouth boiler of a good Welsh coal, we should expect any sample of patent fuel to give, when tested here, as a minimum, 8½ to 9 lbs for each lb. of fuel, and 200 lbs. for each square foot of grate area per hour; the sample, when approved, would then become the standard for receipt of the bulk.

We have not thought it necessary to test the cohesion of the samples by any special method since they were found generally satisfactory in this respect, and much superior to ordinary coal.

The amount of ash in these samples is generally very moderate; an amount below seven per cent. of ash and clinker combined we do not think can be deemed excessive.

The calorific standard would, perhaps, be sufficient restriction; but if any stipulation be made we suggest six per cent. as a maximum.

The samples from Messrs. Formby & Co. show that washing the coal materially improves the quality of the fuel made from it.

The great advantage of patent fuel over ordinary coal for use on board ship lies in the greater quantity that can be stowed in the same amount of space. This advantage may not be of much moment to Her Majesty's ships in time of peace, but since it would be in time of war, we consider the suitability of this fuel for use on board ship should be tested in every way. One difficulty experienced, we understand to be, its removal from the bunkers when they are completely filled with it, and the point as to the extent to which they can be filled, and the best mode of stowing it, we submit, should be thoroughly tested by one or two vessels being coaled with it.

We

We think that patent fuel would resist deterioration exposed to the weather much better than ordinary coal, and on this account might be found specially suitable for shipment to the foreign coal depôts. We would recommend a trial of it for this purpose. We are of opinion—

II.—Patent Fuel.

Compressed Fuel.

(1). That patent fuel of very good quality is made by a large number of manufacturers, and that it may, without difficulty, be secured of a calorific value nearly, if not quite, equal to the best steam coal now supplied.

(2). That any contract should stipulate for a quality equal in calorific value to good steam coal, and the approval of a sample selected for test by an Admiralty officer before the delivery or shipment (if for a foreign depôt) of the bulk.

(3). That the coal should be previously washed.

(4). That the per-centage of ash, if stated, should not exceed six per cent.

We further recommend, that the best method of stowing this fuel on board ship should be ascertained; that its suitability for shipment to the foreign naval coal depôts should be ascertained by supplying it in limited quantity and comparing it with ordinary Welsh coal as regards deterioration by exposure to the weather.

We have, &c.

*W. B. Robinson,*  
Chief Constructor.

*Wm. H. T. Steil,*  
Chief Engineer.

*Wm. Weston,*  
Admiralty Chemist.

The Admiral Superintendent.

Forwarded,

*F. L. McClintock,*  
Admiral Superintendent.

9 February 1877.



## PORTSMOUTH YARD.

(N. S. 793-77.)

8th February 1877.

A STATEMENT showing the Results of Tests of "Patent Fuels."

DATE OF TRIAL.	Fuel used in Trial.	Name of Fuel, and from what Contractor Received.	Number of Lbs. Evaporated by One Lb. of Fuel, calculated from the Temperature of 100°.	Number of Lbs. of Water Evaporated per Square Foot of Fire-grate per Hour, calculated from the Temperature of 100°.	Per-centage of Clinker and Ash.			Smoke.			Number of Lbs. of Fuel Burnt per Square Foot of Fire-grate per Hour.	Deposit of Soot.	Cinders Re-burnt.	Temperature in Furnnel.	Draught in Furnnel.	Weight of Piece of Fuel.		Specific Gravity.	REMARKS.
					Clinker.	Ash.	TOTAL.	Maximum Number.	Average Number.	Per-centage of Time of no Smoke.						In Air.	In Water.		
9 Oct. 1876	10½ Cwts.	"Crown Preserved Fuel Company;" "Pumpquort."	8.37	202.03	4.17	3.15	7.32	3	.76	47.7	23.01	9	34	664	3½	7 1½	1 4½	1.22	Length of fire-grate, 4 feet; area over bridge, 186 square inches; common wrought-iron fire-bars, ¾-inch spaces; thick fires. No smoke consumers used. Clinker of light slag, but large in amount.
10 Oct. "	20	- ditto - - - ditto	8.43	195.21	4.60	2.68	7.28	4	.8	51.7	21.88	16	80	658	3½	7 1½	1 4½	1.22	
26 April "	10½	"Wear Fuel Works" (own make).	8.30	209.73	4.42	1.61	6.03	2	.67	38.6	25.26	8	24	667	3½	7 0	1 0	1.17	- ditto - - - ditto; slides in furnace doors both kept fully open; cakes very much; crumbles very much in breaking up; clinker of very heavy slag, in large quantities, and very troublesome on the bars.
13 July "	20	- ditto - - - ditto	8.45	202.21	4.46	1.84	5.80	3	1.54	0	22.46	16	55	701	3½	7 0	1 0	1.17	
11 Oct. "	10½	"Crown Preserved Fuel Company;" "Pumpquort;" "Hasting's Hartley."	8.19	209.16	5.27	3.40	8.67	4	.86	45.5	24.52	8	30	673	3½	7 3½	1 6	1.23	- ditto - - - ditto; slides in furnace doors open full alternately after each firing. Clinker of moderately heavy slag, and large in quantity.
12 Oct. "	20	- ditto - - - ditto	8.30	200.80	5.45	3.03	8.48	4	1.06	45	22.65	15	77	658	3½	7 3½	1 6	1.23	
17 April "	10½	"Western Maritime Coal and Fuel Company;" "Nixon's Navigation."	8.88	221.60	4.34	1.78	6.12	2	.26	75.0	23.50	9	28	673	3½	10 0	1 11	1.2	- ditto - - - ditto. Clinker of heavy slag, large in amount.
6 July "	20	- ditto - - - ditto	9.15	212.72	4.46	1.61	6.07	1	.53	40.3	22.72	16	60	673	3½	10 0	1 11	1.2	



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A STATEMENT showing the Results of Tests of "Patent Fuels"—continued.

DATE OF TRIAL.	Fuel used in Trial.	Name of Fuel, and from what Contractor Received.	Number of Lbs. of Water Evaporated by One lb. of Fuel, calculated from the Temperature of 100°.	Number of Lbs. of Water Evaporated per Square Foot of Fire-grate per Hour, calculated from the Temperature of 100°.	Per-centage of Clinker and Ash.			Smoke.			Number of Lbs. of Fuel Burnt per Square Foot of Fire-grate per Hour.	Deposit of Soot.	Cinders Re-burnt.	Temperature in Furnel.	Draught in Furnel.	Weight of Piece of Fuel.		Specific Gravity.	REMARKS.
					Clinker.	Ash.	TOTAL.	Maximum Number.	Average Number.	Per-centage of Time of no Smoke.						In Air.	In Water.		
19 April 1876	10½	"F. Geary & Co.," "Nixon's Navigation."	9.02	205.16	3.06	1.61	4.67	2	.47	54	22.70	8	22	664	Inch. 1	Lbs. oz. 14 0½	2 10	1.23	Length of fire-grate, 4 feet; area over bridge, 186 square inches; common wrought-iron fire bars, ½-inch spaces; thick fires. No smoke consumers used. Clinker of heavy slag.
10 July "	20	"ditto - - - ditto -"	9.14	199.61	3.84	1.53	5.36	2	.51	56	21.57	17	57	668	½	9 11	1 7	1.17	"ditto - - - ditto. Clinker of heavy slag and large quantity.
21 April "	10½	"Metropolitan Patent and Artificial Fuel Company," "Nixon's Navigation."	8.97	221.22	4.00	2.80	6.80	1	.54	46.2	24.00	9	28	670	¾	7 2	1 2	1.19	"ditto - - - ditto. Clinker of heavy slag.
12 July "	20	"ditto - - - ditto -"	9.06	210.70	4.55	1.87	6.42	2	.52	51.2	22.52	17	63	677	¾	11 ½	0 11½	1.18	"ditto - - - ditto. Clinker of heavy slag.
22 Sept. "	10½	"Messrs. Formby & Co." No. 4 Sample, "Nixon's Navigation" (unwashed).	9.26	226.55	3.40	2.21	5.61	3	.71	52.5	24.17	9	31	704	¾	7 2	1 2	1.19	"ditto - - - ditto. Clinker of heavy slag.
25 Sept. "	20	"ditto - - - ditto -"	9.26	216.07	3.48	1.65	5.13	2	.73	42.7	23.27	13	59	701	¾	11 ½	0 11½	1.18	"ditto - - - ditto. Clinker of heavy slag.
19 May "	10½	"Messrs. A. & C. Miller," "Imperial."	9.23	218.65	1.53	2.98	4.51	1	.44	56.1	24.00	8	33	694	¾	11 ½	0 11½	1.18	"ditto - - - ditto. ½-inch spaces.
17 May "	10½	"ditto - - - ditto -"	9.20	214.45	1.36	3.03	4.42	2	.19	81.6	24.17	8	46	694	¾	11 ½	0 11½	1.18	"ditto - - - ditto. ½-inch spaces.
17 July "	20	"ditto - - - ditto -"	9.61	207.91	1.70	2.68	4.38	1	.11	89.4	22.13	15	60	698	¾	11 ½	0 11½	1.18	"ditto - - - ditto. ½-inch spaces.
21 July "	20	"ditto - - - ditto -"	9.64	211.65	1.78	2.77	4.55	2	.22	78.5	22.32	15	80	693	¾	11 ½	0 11½	1.18	"ditto - - - ditto. ½-inch spaces.
26 Sept. "	10½	"Messrs. Formby & Co." No. 5 Sample, "Nixon's Navigation," "½ Pump-quart" (unwashed).	9.05	211.26	3.32	3.06	6.38	2	.5	57.5	24.17	8	80	664	¾	7 6	1 6	1.23	"ditto - - - ditto. Clinker of heavy slag.

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A STATEMENT showing the Results of Tests of "Patent Fuels"—continued.

DATE OF TRIAL	Fuel used in Trial.	Name of Fuel, and from what Contractor Received.	Number of Lbs. of Water Evaporated by One Lb. of Fuel, calculated from the Temperature of 100°.	Number of Lbs. of Water Evaporated per Square Foot of Fire-grate per Hour, calculated from the Temperature of 100°.	Per-centage of Clinker and Ash.			Smoke.			Deposit of Soot.	Cinders Re-burnt.	Temperature in Funnel.	Draught in Funnel.	Weight of Piece of Fuel.		Specific Gravity.	REMARKS.
					Clinker.	Ash.	TOTAL.	Maximum Number.	Average Number.	Per-centage of Time of no Smoke.					In Air.	In Water.		
28 April 1876	10½ Cwt.	"Nixon, Taylor, and Cory," "Nixon's Navigation."	9.70	232.72	2.21	1.44	3.65	1	.4	59.5	8	30	734	1	14 6½	2 2	1.17	Length of fire-grate, 4 feet; area over bridge, 186 square inches; common wrought-iron fire-bars, ¾-inch spaces; thick fires; slides in furnace doors half opened alternately after each firing; no smoke consumer used. Clinker of heavy slag.
14 July "	20	- ditto - - - ditto -	9.66	223.46	2.05	1.38	3.43	2	.38	68.9	16	72	735	2	14 6½	2 2	1.17	
20 May "	10½	"Messrs. A. & C. Miller," "Nixon's Navigation."	9.54	237.70	1.95	1.87	3.82	2	.55	49.5	9	30	722	2	7 3	- 10	1.09	- ditto - - - ditto. Clinker of heavy slag.
24 July "	20	- ditto - - - ditto -	9.68	228.74	1.78	1.70	3.48	2	.81	29.8	16	74	707	2	7 3	- 10	1.09	- ditto - - - ditto. Clinker of heavy slag.
14 Sept. "	10½	"Messrs. Formby and Co.," No. 1 Sample "Nixon's Navigation" (washed).	9.52	228.13	2.55	1.61	4.16	2	.52	49.2	8	35	694	2	7 15	1 6½	1.21	- ditto - - - ditto. Clinker of heavy slag.
15 Sept. "	20	- ditto - - - ditto -	9.66	220.23	2.90	1.61	4.51	2	.44	56.2	15	66	712	2	7 15	1 6½	1.21	- ditto - - - ditto. Clinker of heavy slag.
8 April "	10½	"Diamond Fuel Company," "Nixon's Navigation."	9.48	226.81	1.70	1.44	3.14	2	.66	37.1	9	29	690	2	9 8	1 6½	1.17	- ditto - - - ditto. Clinker of slag, but easily moved off the bars.
31 July "	20	- ditto - - - ditto -	9.52	222.64	1.74	1.47	3.21	2	.93	30.6	16	60	729	2	9 8	1 6½	1.17	- ditto - - - ditto. Clinker of slag, but easily moved off the bars.

Forwarded in accordance with Admiralty Letter, D. of C., 28th January 1876, C. P. (647-754).

To the Admiral Superintendent.

W. B. Robinson, Chief Constructor.  
Wm. Hy. Steel, Chief Engineer.

Forwarded,



(N. S. 1781-77.)

II.—Patent Fuel  
Compressed Fuel

TRIALS with the "Star" and "Crown" Preserved Fuels and Mixed Coal.

"Minotaur" at Sea.

Lat. 41° 49' N.—Long. 9° 38' W.

31 March 1877.

SUBMITTED for the consideration of the Lords Commissioners of the Admiralty with reference to your letters, N. S. 2623—4723, 30th June 1875; N. S. 3027—6726, 7th September 1875; N.S.P.N. 5951—7476, 27th September 1875; and N. S. 4171—8425, 2nd November 1875.

No. 84.  
5 Enclosures.

Observing that I entirely concur in the report of Mr. Sampson, Inspector of Machinery.

2. After these exhaustive trials, I can only recommend the employment of Preserved Fuel when necessary to receive supplies in excess of the quantities that could be stowed in the bunkers. In war-time the necessity would generally exist.

To the Secretary of the Admiralty.

*F. Beauchamp Seymour,*  
Vice Admiral Commanding.

Enclosure No. 1 in Channel Letter, No. 84, 31st March 1877.

TRIALS with the "Star" and "Crown" Preserved Fuels and Mixed Coal.

Her Majesty's Ship "Minotaur,"  
Cadiz, 24 March 1877.

Sir,

IN compliance with your directions, I have examined the reports of trials made in Her Majesty's Ships "Minotaur," "Black Prince," and "Resistance," with the "Star" Preserved Fuel and Mixed Coal, and in Her Majesty's Ships "Black Prince" and "Resistance" with the "Crown" Preserved Fuel and Mixed Coal. With a view to ready comparison I have made a general abstract of them, which I have the honour to forward for your information.

I beg leave to observe that these trials serve to confirm the opinion expressed in my letter of 1st August 1876, when submitting the reports of trials made in Her Majesty's ships under your command during the cruise of 1875-76, that the fuels are not so well suited for service in Her Majesty's ships as the Government mixture of two-thirds Welsh and one-third North Country coal.

I was informed at Portsmouth Dockyard that the price per ton of "Star" fuel is 26 s., of Crown fuel 20 s., and of mixed coal 17 s. 4 d.; assuming this to be correct, I find from the trials of the "Star" fuel and mixed coal, the cost per 100 indicated horse-power per hour with the "Star" fuel in the "Minotaur" to be 87·75 d., in the "Black Prince" 70·48 d., and in the "Resistance" 78·41 d., the corresponding cost with mixed coal in the "Minotaur" being 44·75 d., in the "Black Prince" 47·73 d., and in the "Resistance" 41·97 d.

The two trials of 12 hours, one with "Star" fuel and one with mixed coal in the "Minotaur," were made under similar conditions, and show that the cost per 100 indicated horse-power per hour with "Star" fuel is 90·53 d., and with mixed coal 44·75 d.

In the trials with "Crown" fuel and mixed coal the cost per 100 indicated horse-power per hour with "Crown" fuel in the "Black Prince" is 53·89 d., in the "Resistance" 72·10 d.; and with mixed coal in the "Black Prince" 41·78 d., in the "Resistance" 68·34 d.

I have, &amp;c.

Vice Admiral F. Beauchamp P. Seymour, C.B.,  
Commanding Channel Squadron.

*R. Sampson,*  
Inspector of Machinery,  
Channel Squadron.

## ABSTRACT of REPORTS of TRIALS with the "Star" and "Crown" Preserved Fuels and Mixed Coals

## "STAR" PRESERVED FUEL AND MIXED COAL. - - - -

SHIP'S NAME.	T R I A L.		W I N D.		S E A.	SAIL.	Average Indicated Horse Power.	Description Used.
	Date of	Duration in Hours.	Force of.	Direction relative to Ship.	State of.	Average Number of Square Feet Set.		
"Minotaur" - -	1-2 Sept. 1876	12	3 to 6	Close-hauled to bow	Smooth - -	22,578	622.1	Star Fuel - -
Ditto - -	4-5 Sept. "	16	2 to 8	Bow to ahead - -	Rough - -	- -	442.3	- ditto - -
Results combined -		28	-	- - - -	- - - -	22,578	519.3	- ditto - -
"Black Prince" -	1-2 Sept. 1876	12	3 to 4	Bow - - - -	Slight swell - -	18,232	692.79	Star Fuel - -
Ditto - -	26-27 Sept. "	24	1 to 3	ditto - - - -	- ditto - -	11,032	610.06	- ditto - -
Results combined -		36	-	- - - -	- - - -	14,037	637.63	- ditto - -
"Resistance" -	4 Sept. - 1876	24	3 to 7	Ahead - - - -	Rough ahead - -	12,884	399.35	Star Fuel - -
Ditto - -	6 Sept. - "	23.5	1 to 5	6 points on bow -	Moderate - -	16,493	431.17	- ditto - -
Ditto - -	29 Sept. - "	11.75	2	Quarter - - - -	Smooth - -	24,109	284.2	- ditto - -
Results combined -		59.25	-	- - - -	- - - -	18,611	389.1	- ditto - -
"Minotaur" -	3 Sept. - 1876	12	4 to 5	Ahead - - - -	Moderate - -	- -	395.2	$\frac{2}{3}$ Star Fuel, $\frac{1}{3}$ Mixed Coal.
"Black Prince" -	3-4 Sept. 1876	12	3 to 4	Ahead - - - -	Slight swell - -	- -	481.76	$\frac{2}{3}$ Star Fuel, $\frac{1}{3}$ Mixed Coal.
Ditto - -	27-28 Sept. "	24	3 to 1	Before beam - -	- ditto - -	29,936	447.99	- ditto - -
Results combined -		36	-	- - - -	- - - -	29,936	459.24	- ditto - -
"Resistance" -	3 Sept. - 1876	24	1 to 5	Ahead - - - -	Moderate - -	- -	358.8	$\frac{2}{3}$ Star Fuel, $\frac{1}{3}$ Mixed Coal.
Ditto - -	27 Sept. - "	24	2 to 3	5 points on bow -	Smooth - -	22,957	350.88	- ditto - -
Results combined -		48	-	- - - -	- - - -	22,957	354.84	- ditto - -
"Minotaur" -	2-3 Sept. 1876	12	0 to 1	Ahead - - - -	Smooth - -	- -	350.9	$\frac{1}{2}$ Star Fuel, $\frac{1}{2}$ Mixed Coal.
"Black Prince" -	2-3 Sept. 1876	12	1 to 3	Ahead - - - -	Slight swell - -	1,612	450.23	$\frac{1}{2}$ Star Fuel, $\frac{1}{2}$ Mixed Coal.
Ditto - -	28-29 Sept. "	22	1 to 2	Quarter - - - -	Smooth - -	15,422	311.36	- ditto - -
Results combined -		34	-	- - - -	- - - -	11,842	360.35	- ditto - -
"Resistance" -	2 Sept. - 1876	22	2 to 4	6 points on bow -	Moderate - -	21,907	505.57	$\frac{1}{2}$ Star Fuel, $\frac{1}{2}$ Mixed Coal.
Ditto - -	25 Sept. - "	14	1 to 4	Ahead and 4 points on bow.	Smooth - -	- -	480.5	- ditto - -
Results combined -		36	-	- - - -	- - - -	21,907	495.82	- ditto - -
"Minotaur" -	4 Sept. - 1876	12	4 to 8	Ahead - - - -	Rough - -	- -	406.1	$\frac{1}{2}$ Star Fuel, $\frac{1}{2}$ Mixed Coal.
"Black Prince" -	2 Sept. - 1876	12	2 to 1	Bow - - - -	Slight swell - -	15,361	678.3	$\frac{1}{2}$ Star Fuel, $\frac{1}{2}$ Mixed Coal.
Ditto - -	8 Mar. - 1877	6	5 to 2	Ahead - - - -	Smooth - -	- -	936.19	- ditto - -
Results combined -		18	-	- - - -	- - - -	15,361	764.26	- ditto - -
"Resistance" -	5 Sept. - 1876	24	3 to 7	Bow and ahead -	Moderate and rough.	12,884	478.57	$\frac{1}{2}$ Star Fuel, $\frac{1}{2}$ Mixed Coal.
Ditto - -	28 Sept. - "	24	1 to 3	6 points on bow and quarter.	Smooth - -	20,073	316.0	- ditto - -
Results combined -		48	-	- - - -	- - - -	18,598	397.28	- ditto - -

Her Majesty's Ships "Minotaur," "Black Prince," and "Resistance."

## "STAR" PRESERVED FUEL AND MIXED COAL.

FUEL.				Distance Run				Per-centage of Ash and Clinker.	Smoke Numbers.		REMARKS.
Consumption				During Trial.		Per Ton of Fuel.			Maximum.	Average.	
For Distance Logged During Trial.	Steam and Sail.	Per Indicated Horse Power per Hour.	Per Square Foot of Grate per Hour.	Steam alone.	Steam and Sail.	Steam alone.	Steam and Sail.				
Tons.	Tons.	Lbs.	Lbs.	Knots.	Knots.	Knots.	Knots.				
7.6	4.1	6.5	11.0	57.1	14.3	3.24	3.48	18.6	4	1.53	Smoke slides $\frac{1}{2}$ inch open; fire-bars $\frac{5}{8}$ inch apart.
9.2	-	6.0	7.3	45.6	-	2.30	-	12.4	3	1.50	- - ditto - - - ditto.
6.8	4.1	6.30	8.8	102.7	14.3	2.79	3.48	15.88	4	1.51	
-	19.4	5.22	11.6	-	82.2	-	4.23	22.12	2	0.41	Smoke slides shut; fire-bars $\frac{5}{8}$ to $\frac{3}{4}$ inch apart.
9.4	23.1	4.97	8.15	43.5	100.5	4.62	4.35	21.7	4	1.02	- - ditto - - - ditto.
9.4	42.5	5.06	9.3	43.5	182.7	4.62	4.29	21.88	4	0.82	
11.25	3.2	5.71	12.17	69.0	8.8	3.24	2.75	16.16	1	0.458	Smoke slides shut; fire-bars $\frac{5}{8}$ inch apart.
6.8	17.7	5.41	9.51	24.2	107.2	3.56	6.05	16.22	1	0.402	- - ditto - - - ditto.
1.0	8.0	6.02	9.13	7.0	64.7	7.0	8.08	10.00	1	0.458	- - ditto - - - ditto.
9.05	28.9	5.63	10.51	100.2	180.7	3.44	6.25	15.01	1	0.435	
4.4	-	6.8	7.3	47.4	-	3.29	-	16.30	3	1.50	Smoke slides $\frac{1}{2}$ inch open; fire-bars $\frac{5}{8}$ inch apart.
7.4	-	6.74	10.41	47.9	-	2.75	-	16.22	4	1.43	Smoke slide $\frac{1}{2}$ part open; fire-bars $\frac{5}{8}$ to $\frac{3}{4}$ inch apart.
1.1	24.7	5.37	6.47	6.8	161.2	6.18	6.52	15.80	3	1.07	Smoke slides shut; fire-bars $\frac{5}{8}$ to $\frac{3}{4}$ inch apart.
8.5	24.7	5.85	7.78	54.7	161.2	2.95	6.52	16.00	4	1.19	
9.65	-	5.11	9.78	105.3	-	5.85	-	11.35	1	0.527	Smoke slides shut; fire-bars $\frac{5}{8}$ inch apart.
-	21.9	5.82	10.9	-	151.4	-	6.91	17.20	1	0.499	- - ditto - - - ditto.
9.65	21.9	5.46	10.34	105.3	151.4	5.85	6.91	14.44	1	0.513	
2.6	-	6.7	6.3	60.2	-	4.77	-	9.80	3	1.20	Smoke slides $\frac{1}{2}$ inch open; fire-bars $\frac{5}{8}$ inch apart.
8.26	6.34	6.05	8.73	30.8	28.8	3.72	4.54	10.78	3	0.91	Smoke slides $\frac{1}{2}$ part open; fire-bars $\frac{5}{8}$ to $\frac{3}{4}$ inch apart.
4.5	15.10	6.41	5.36	30.4	99.7	6.75	6.60	12.40	3	1.14	- - ditto - - - ditto.
2.76	21.44	6.25	6.55	61.2	128.5	4.79	5.99	11.72	3	1.06	
3.55	21.9	5.12	9.21	18.0	120.3	5.07	5.49	6.77	2	0.721	Smoke slides shut; fire-bars $\frac{5}{8}$ inch apart.
3.2	-	4.39	11.25	77.5	-	5.87	-	8.98	2	0.985	- - ditto - - - ditto.
6.75	21.9	4.85	10.0	95.5	120.3	5.70	5.49	7.63	2	0.823	
2.15	-	5.5	6.16	41.1	-	3.30	-	13.90	3	1.42	Smoke slides $\frac{1}{2}$ inch open; fire-bars $\frac{5}{8}$ inch apart.
-	18.7	5.14	11.18	-	83.7	-	4.47	10.31	3	0.75	Smoke slides $\frac{1}{2}$ part open; fire-bars $\frac{5}{8}$ to $\frac{3}{4}$ inch apart.
8.8	-	3.51	10.53	36.5	-	4.14	-	8.60	2	1.21	Smoke slides $\frac{1}{2}$ part open; fire-bars $\frac{5}{8}$ to $\frac{3}{4}$ inch apart.
8.8	18.7	4.47	10.96	36.5	83.7	4.14	4.47	9.78	3	0.91	
0.95	4.05	4.87	12.44	78.6	15.0	3.75	3.70	12.97	2	1.11	Smoke slides shut; fire-bars $\frac{5}{8}$ inch apart.
7.05	11.4	5.44	9.18	52.5	89.0	7.44	7.80	21.90	2	1.041	- - ditto - - - ditto.
8.0	15.45	5.10	10.81	131.1	104.0	4.68	6.73	16.84	2	1.075	The mixed coal during the trial of 28th September 1876 ran very small.



ABSTRACT of Reports of Trials with the "Star" and "Crown" Preserved Fuels and Mixed

"STAR" PRESERVED FUEL AND MIXED COAL—continued.

SHIP'S NAME.	T R I A L.		W I N D.		S E A.	SAIL.	Average Number of Square Feet Set.	Average Indicated Horse Power.	FUEL.  Description Used.
	Date of.	Duration in Hours.	Force of.	Direction relative to Ship.					
"Minotaur" -	2 Sept. - 1876	12	2 to 4	Close-hauled - -	Smooth - -		25,122	627.3	Mixed Coal -
"Black Prince" -	4 Sept. - 1876	12	3 to 6	Ahead to bow - -	Moderate head swell.		10,324	493.44	Mixed Coal
Ditto - -	8-9 Mar. 1877	6	2 to 3	Bow - - - -	Smooth - -		- -	791.72	- ditto - -
	Results combined -	18	-	- - - -	- - - -		10,324	592.86	- ditto - -
"Resistance" -	26 Sept. - 1876	24	1 to 3	Ahead and 3 points on bow.	Smooth - -		12,984	472.36	Mixed Coal -

"CROWN" PRESERVED FUEL AND MIXED COAL.

"Black Prince" -	6 Sept. - 1876	6	4 to 2	Before beam - -	Long swell -		17,917	638.26	Crown Fuel -
"Resistance" -	26-27 Nov. 1876	22	3 to 5	Quarter, and 5 points on bow.	Moderate - -		21,147	149.03	Crown Fuel -
Ditto - -	2 Dec. - ,	24	4 to 10	6 points on bow -	Heavy sea -		10,966	221.08	- ditto - -
	Results combined -	46	-	- - - -	- - - -		15,594	186.62	- ditto - -
"Black Prince" -	11 Sept. - 1876	5	2 to 3	Quarter - - -	Moderate -		31,136	831.89	$\frac{2}{3}$ Crown Fuel, $\frac{1}{3}$ Mix Coal.
"Resistance" -	29-30 Nov. 1876	24	2 to 8	5 points on bow -	Rough - -		8,580	283.34	$\frac{2}{3}$ Crown Fuel, $\frac{1}{3}$ Mix Coal.
"Black Prince" -	6-7 Sept. 1876	6	1 to 2 to 1	Bow to beam - -	Long swell -		11,519	541.76	$\frac{1}{2}$ Crown Fuel, $\frac{1}{2}$ Mix Coal.
"Resistance" -	28-29 Nov. 1876	24	1 to 6	2 points on bow -	Smooth - -		8,311	333.84	$\frac{1}{2}$ Crown Fuel, $\frac{1}{2}$ Mix Coal.
"Black Prince" -	6 Sept. - 1876	6	2	Before beam - -	Long swell -		12,006	617.79	$\frac{1}{2}$ Crown Fuel, $\frac{1}{2}$ Mix Coal.
"Resistance" -	30 Nov. 1876, 1 Dec. 1876.	24	5 to 8	5 points on bow -	Heavy beam swell		10,280	211.82	$\frac{1}{2}$ Crown Fuel, $\frac{1}{2}$ Mix Coal.
"Black Prince" -	25 Sept. - 1876	6	4 to 2	Ahead - - - -	Smooth - -		- -	613.89	Mixed Coal -
"Resistance" -	3 Dec. - 1876	24	7 to 8	6 $\frac{1}{2}$ points on bow -	Heavy sea -		7,208	153.29	Mixed Coal -

FROM the above the following Particulars are collected.

DESCRIPTION OF FUEL USED.	Consumption per Hour.						Per-centage of Ash and Clinker.			Distance run per Ton of Fuel.					
	Per Indicated Horse-power.			Per Square Foot of Grate.						Steam alone.			Steam and Sail.		
	Minotaur.	Black Prince.	Resistance.	Minotaur.	Black Prince.	Resistance.				Minotaur.	Black Prince.	Resistance.	Minotaur.	Black Prince.	Resistance.
Star Preserved Fuel - - -	Lbs. 6.30	Lbs. 5.06	Lbs. 5.63	Lbs. 8.80	Lbs. 9.30	Lbs. 10.51	15.88	21.88	15.01	Knots. 2.79	Knots. 4.62	Knots. 3.44	Knots. 3.48	Knots. 4.29	Knots. 6.2
$\frac{2}{3}$ Star Fuel and $\frac{1}{3}$ Mixed Coal - - -	6.80	5.85	5.46	7.30	7.78	10.34	16.30	16.00	14.44	3.29	2.95	5.35	-	6.52	6.9
$\frac{1}{2}$ Star Fuel and $\frac{1}{2}$ Mixed Coal - - -	6.70	6.25	4.85	6.30	6.55	10.00	9.80	11.72	7.63	4.77	4.79	5.70	-	5.99	5.4
$\frac{1}{3}$ Star Fuel and $\frac{2}{3}$ Mixed Coal - - -	5.50	4.47	5.10	6.16	10.96	10.81	13.90	9.78	16.84	3.30	4.14	4.68	-	4.47	6.7
Mixed Coal - - -	4.82	5.14	4.52	8.20	9.77	11.39	5.20	7.86	10.10	4.68	3.26	6.04	5.29	2.34	6.2



Her Majesty's Ships "Minotaur," "Black Prince," and "Resistance"—continued.

"STAR" PRESERVED FUEL AND MIXED COAL—continued.

FUEL.				Distance Run				Per-centage of Ash and Clinker.	Smoke Numbers.		REMARKS.
Consumption				During Trial.		Per Ton of Fuel.			Maximum.	Average.	
For Distance Logged During Trial.											
Alone.	Steam and Sail.	Per Indicated Horse Power per Hour.	Per Square Foot of Grate per Hour.	Steam alone.	Steam and Sail.	Steam alone.	Steam and Sail.				
Tons.	Tons.	Lbs.	Lbs.	Knots.	Knots.	Knots.	Knots.				
4.5	11.7	4.82	8.2	21.1	62.0	4.68	5.29	5.20	3	1.40	Smoke slides $\frac{1}{4}$ inch open; fire-bars $\frac{5}{8}$ inch apart.
3.0	3.2	6.12	9.69	30.8	7.5	2.36	2.34	8.88	5	1.95	Smoke slides $\frac{1}{2}$ part open; fire-bars $\frac{5}{8}$ to $\frac{3}{4}$ inch apart.
8.8	-	3.91	9.93	38.8	-	4.67	-	5.90	2	0.60	Smoke slides $\frac{1}{4}$ part open; fire-bars $\frac{5}{8}$ to $\frac{3}{4}$ inch apart.
1.3	3.2	5.14	9.77	69.6	7.5	3.26	2.34	7.86	5	1.51	
4.25	8.65	4.52	11.39	86.1	54.0	6.04	6.24	10.10	3	1.458	Smoke slides shut; fire-bars $\frac{5}{8}$ inch apart.

"CROWN" PRESERVED FUEL AND MIXED COAL.

0.3	8.3	5.03	10.29	0.5	28.5	1.66	3.43	14.09	3	1.61	Smoke slides $\frac{1}{4}$ part open; fire-bars $\frac{5}{8}$ to $\frac{3}{4}$ inch apart.
1.8	10.2	8.19	6.51	11.3	80.4	6.27	7.88	18.25	1	0.416	Smoke slides shut; fire-bars $\frac{5}{8}$ inch apart.
-	13.8	5.82	6.86	-	51.3	-	3.71	18.02	1	0.483	- - ditto - - - ditto.
1.8	24.0	6.73	6.69	11.3	131.7	6.27	5.49	18.13	1	0.451	
1.2	5.6	3.66	9.76	3.76	37.0	3.13	6.60	12.44	2	1.01	Smoke slides $\frac{1}{2}$ part open; fire-bars $\frac{5}{8}$ to $\frac{3}{4}$ inch apart.
-	17.9	5.89	8.13	-	93.0	-	5.19	13.02	1	0.466	Smoke slides shut; fire-bars $\frac{5}{8}$ inch apart.
-	8.4	5.78	10.05	-	36.6	-	4.35	11.65	3	1.30	Smoke slides $\frac{1}{2}$ part open; fire-bars $\frac{5}{8}$ to $\frac{3}{4}$ inch apart.
4.4	13.1	4.89	7.60	21.8	94.0	4.95	7.17	14.81	2	0.833	Smoke slides shut; fire-bars $\frac{5}{8}$ inch apart.
0.4	9.4	5.92	11.72	1.33	35.57	3.32	3.78	8.84	2	1.09	Smoke slides $\frac{1}{4}$ part open; fire-bars $\frac{5}{8}$ to $\frac{3}{4}$ inch apart.
-	15.25	6.71	7.59	-	37.9	-	2.48	16.87	2	1.066	Smoke slides shut; fire-bars $\frac{5}{8}$ inch apart.
7.4	-	4.50	7.42	34.1	-	4.6	-	7.68	3	0.83	Smoke slides shut; fire-bars $\frac{5}{8}$ to $\frac{3}{4}$ inch apart.
-	11.6	7.36	6.02	-	75.3	-	6.49	11.11	3	1.283	Smoke slides shut; fire-bars $\frac{5}{8}$ inch apart.

FROM the above the following Particulars are collected.

DESCRIPTION OF FUEL USED.	Consumption per Hour.				Per-centage of Ash and Clinker.		Distance Run per Ton.			
	Per Indicated Horse-power.		Per Square Foot of Grate.				Steam alone.		Steam and Sail.	
	Black Prince.	Resistance.	Black Prince.	Resistance.	Black Prince.	Resistance.	Black Prince.	Resistance.	Black Prince.	Resistance.
Crown Preserved Fuel	Lbs.	Lbs.	Lbs.	Lbs.			Knots.	Knots.	Knots.	Knots.
Crown Fuel and $\frac{1}{2}$ Mixed Coal	5.03	6.73	10.29	6.69	14.09	18.13	1.66	6.27	3.43	5.49
Crown Fuel and $\frac{1}{4}$ Mixed Coal	3.66	5.89	9.76	8.18	12.44	13.02	3.13	-	6.60	5.19
Crown Fuel and $\frac{1}{8}$ Mixed Coal	5.78	4.89	10.05	7.60	11.65	14.81	-	4.95	4.35	7.17
Crown Fuel and $\frac{1}{16}$ Mixed Coal	5.92	6.71	11.72	7.59	8.84	16.87	3.32	-	3.78	2.48
Mixed Coal	4.50	7.36	7.42	6.02	7.68	11.11	4.60	-	-	6.49

R. Sampson,  
Inspector of Machinery, Channel Squadron.

## II.—Patent Fuel.

French Patent  
Fuel.

## FRENCH PATENT FUEL.

(N. S. 5792—76.)

Sir,

Admiralty, S.W., 21 December 1876.

REFERRING to Admiralty letter of the 31st May 1875, N. S. 1990—3882, and to your reply thereto, dated 16th July 1875, relative to the use of patent fuel in the French Navy, I am commanded by my Lords Commissioners of the Admiralty to request that you will ask Lord Derby to direct the Naval Attaché to the Embassy at Paris to ascertain and report whether in the French Navy the advantages of using patent fuel are still considered to be obtained.

The Under Secretary of State for  
Foreign Affairs.

I am, &c.  
*Robert Hall.*

(N. S. 66—77.)

Sir,

Foreign Office, 3 January 1877.

ON the receipt of your letter of the 21st ultimo, requesting to be furnished with certain information respecting the advantages of the patent fuel used in the French Navy, Lord Derby instructed Her Majesty's Ambassador at Paris to call on Captain Howard for a report on this subject, and I am now directed by his Lordship to transmit to you, to be laid before the Lords Commissioners of the Admiralty, Captain Howard's reply, which encloses a memorandum furnished to him from the Storekeeper's Department of the French Navy.

The Secretary to the Admiralty.

I am, &c.  
*Tenterden.*

## OPINION of French Navy on Patent Fuel.

My Lord,

Paris, 28 December 1876.

No. 53.

WITH reference to Lord Derby's letter, No. 1050, of the 27th instant, addressed to you, and desiring you to call on me to ascertain and report whether in the French Navy the advantages of using patent fuel are still considered to be obtained, and referring to a memorandum on the subject furnished by the French Government on the 13th July 1875, I have to report that, in compliance with your directions, I called on Rear Admiral Baron Roussin, Chef D'Etat Major du Minister de la Marine, who informed me that no change had been made in the usage of the French Navy on this head. He considered the advantages still obtained, and that a better fuel was thereby produced from a given description of coal or mixture of coals, independent of the other advantages, such as facility of loading, stowage of a larger quantity, diminution of loss from dust, and capacity to bear exposure.

I understood, however, that, as this fuel has been adopted for some time, and but little plain coal is now used, there has not been much opportunity of drawing a comparison.

He said the best coal came from the north of France, notably from Anzin, and that French coal only was used, in order to encourage native industry.

As I had not seen the memorandum referred to in Lord Derby's letter, he directed the storekeeper to give me a copy, which I enclose, as the storekeeper said he believed some corrections had been made in it.

The Right Hon. Lord Lyons, G.C.B.,  
&c. &c. &c.

I have, &c.  
*Ed. H. Howard,*  
Captain, R.N., and Naval Attaché.

La Marine française a été conduite à généraliser l'usage des agglomérés à bord des bâtiments de la flotte, parceque cette espèce de combustible, produit par l'industrie, présente sur les charbons naturels en roches l'avantage de faire disparaître ou au-moins d'atténuer sensiblement par une *cohésion* artificielle les pertes considérables qu'entraîne la friabilité plus ou moins accusée de la plupart de ces charbons naturels, ainsi que celui d'être plus propice, par ses formes régulières, aux conditions d'arrimage et de conservation auxquelles les combustibles de navigation doivent satisfaire.

Les



Les agglomérés étant généralement composés de menus charbons provenant des débris des charbons extraits des mines, et de 8 pour cent de brai, matière combustible, les expériences comparatives faites sur des agglomérés et sur les charbons en roches de même origine ont toujours démontré que les résultats fournis par une combustion opérée dans des conditions égales, étaient égaux aussi pour les éléments de chauffe, pour les quantités d'eau vaporisée, &c., &c., lorsque la teneur en cendres est la même pour les deux combustibles à comparer. Et comme il est toujours possible de réduire par le lavage des menus la teneur en cendres des agglomérés au-dessous de celle présentée par les roches après leur deschistage ordinaire, ou au-dessous d'un maximum évalué pratiquement, pour limiter l'encrassement des grilles par les mâchefers et limiter par suite le travail des chauffeurs, on est certain de rendre les résultats et la conduite de la chauffe préférables en faisant usage des agglomérés au lieu de roches.

Les agglomérés se prêtent d'ailleurs comme les roches aux mélanges réputés les plus avantageux pour les résultats de la chauffe, et de même qu'en Angleterre on a jugé qu'il était plus avantageux de brûler en même temps le charbons plus calorifique mais plus lent de Cardiff avec celui plus léger mais plus ardent de Newcastle; de même la Marine française demande à l'industrie des agglomérés plus calorifiques mais plus lents de la nature du Cardiff, et des agglomérés plus légers mais plus ardents de la nature du Newcastle pour les brûler ensemble, mélangés dans les meilleures proportions reconnues pour les conditions générales de la navigation ou pour pouvoir les brûler séparément selon les circonstances dans les colonies où le tirage est faible. Les proportions les plus générales du mélange sont de  $\frac{1}{3}$  d'agglomérés ardents pour  $\frac{2}{3}$  d'agglomérés lents.

La Marine française a le soin de stipuler dans ses marchés un maximum de la teneur en cendres pour les agglomérés. Ce maximum varie pour les charbons français de 7 à 10 pour cent selon que les charbons sont par nature moins ou plus terreux ou schisteux, et que les menus peuvent être agglomérés secs ou lavés. Dans les Galles du Sud, les menus sont généralement obtenus à 7 pour cent sans lavage préalable.

La constatation de la quantité de teneur en cendres a lieu par les soins des agents de la Marine, en faisant encinérer dans un fourneau à coupelle des fragments réduits en poudre des agglomérés à recevoir. Le même procédé d'incinération a lieu pour estimer la qualité du brai employé.

Le brai, seule substance agglomérante trouvée convenable jusqu'à ce jour, joue un rôle considérable pour les résultats de la fabrication. Si le brai est trop goudronneux, c'est-à-dire trop liquide, les éléments volatiles plus considérables qui s'en dégagent lorsque l'aggloméré est exposé aux feux endommagent promptement les yeux des chauffeurs, et d'ailleurs la pâte est trop collante pour la fabrication. Le brai étant trop sec, la pâte n'est pas liée, et par suite la cohésion n'est qu'apparente et momentanée. Un bon brai pour agglomérer doit présenter au fourneau à coupelle environ 45 pour cent de coke dont 1 à 2 pour cent de cendres, et 55 pour cent de produits volatiles. Son point de fusion doit commencer à 70° centigrades.

Pour déterminer le degré de cohésion des agglomérés, c'est-à-dire le degré de leur résistance à la rupture ou à la désagrégation par des chocs ou sous l'influence du temps, la Marine opère de la manière suivante par les soins de ses agents. On introduit 50 kilogrammes de briquettes ou agglomérés concasés en 100 morceaux de 0<sup>m</sup> 500 comme ceux qu'on met sur les grilles, dans un cylindre en tôle forte de 0 mètres 92 de diamètre en de 1 mètre de longueur. Ce cylindre est divisé en trois compartiments égaux au moyen de diaphragmes longitudinaux, en tôle d'un centimètre d'épaisseur à bords arrondis. On ferme le cylindre et on lui fait faire 50 tours complets avec une vitesse de 25 tours par minute.

On prend ensuite à la main tout le charbon qui sera encore en morceaux gros ou petite, et on le crible doucement sur une grille horizontale dont les vides sont des carrés de trois centimètres de côté. Tout ce qui passe par cette grille est considéré comme poussière. Le rapport du poids de ce charbon resté sur la grille au poids du charbon expérimenté (50<sup>kg</sup>) indique le degré de cohésion. Ainsi, dans le cas où l'on retirerait 30<sup>kg</sup> de morceaux d'agglomérés restés sur la grille ayant plus de 3<sup>e</sup> de côté, la cohésion serait de  $\frac{30}{50} = 0.60$ .

Il résulte des observations d'un longue pratique que lorsque le degré de cohésion ainsi obtenu présente un minimum de 50 pour cent, les agglomérés satisfont complètement aux conditions d'un bon service; ils se conservent exposés à l'air dans les parcs sans altération sensible pendant plusieurs années consécutives, et peuvent subir les opérations multiples de chargement et de déchargement de mise en parc et en soute, sans être endommagés mais il est indispensable que ces opérations soient faites à la main autant que possible, et que les briquettes descendent au fond des soutes sur des glissières, s'il est impossible de les y conduire à la main, dont on doit toujours faire usage pour l'arrimage; car, si on traite les agglomérés comme les roches, sans aucun ménagement en les jetant dans les soutes, on est privé naturellement des avantages que leur cohésion et surtout leurs formes présentent pour l'arrimage.

II.—Patent Fuel

French Patent  
Fuel.

II.—Patent Fuel.  
 French Patent  
 Fuel.

La Marine française a écarté les agglomérés cylindriques pour adopter la forme parallélipédique ou en *briquettes* des agglomérés dont elle fait usage; cette forme réalise mieux que toute autre le but important d'un arrimage; car, dans un même espace, on peut faire contenir 20 à 25 pour cent de combustible en plus en y plaçant des briquettes au lieu de roches.

Les dimensions des briquettes, et par suite leur poids, ne sauraient être arbitraires. On a pu constater dans la Marine française que les briquettes fabriquées avec les moyens ordinaires de cette industrie ne sont comprimées qu'à leur surface, laissant l'intérieur en poussière lorsque leur poids est supérieur à 10<sup>k</sup> et l'épaisseur entre les surfaces de choc au-dessus de 0<sup>m</sup> 12. Elle s'en est donc tenue jusqu'ici à l'usage de briquettes de 9<sup>k</sup> de poids maximum (telles sont les briquettes d'Anzin, de la Grand Combe de Portes et Sénéchas &c., ayant en moyenne 0<sup>m</sup> 30 de longueur, 0<sup>m</sup> 10 d'épaisseur, et 0<sup>m</sup> 20 de largeur), à celui de briquettes de 5 à 6<sup>k</sup> de poids constituant un modèle moyen, et enfin à celui de petit modèle de 2<sup>k</sup> 500 à 3<sup>k</sup> de poids.

Les grandes compagnies houillères françaises qui se livrent à la fabrication des agglomérés, pouvant plus facilement engager un grand capital et voulant économiser le temps, ont généralement adopté le grand modèle 9<sup>k</sup> de Mazeline ou de Révollier, ce dernier agissant avec la presse hydraulique à une fabrication très normale; les petits fabricants, par les raisons inverses, ont adopté le petit modèle de 3<sup>k</sup>.

Lorsque les briquettes arrivent intactes dans la chambre de chauffe, ce qui est ordinaire si elles ont été manipulées avec soin, on doit les casser avec un hachot si on veut éviter 10 à 12 pour cent de perte occasionnée par l'usage de la masse servant à casser les roches.

Il est évident que la petite briquette de 3<sup>k</sup> exigera moins de coups de hachot que celle de 9<sup>k</sup> pour être réduite en morceaux de 0<sup>k</sup> 500 estimés comme les plus convenables pour la chauffe, et par suite donnera moins de débris et de perte. Quant à la briquette de 9<sup>k</sup>, si elle est bien comprimée et à partir de 0.50 de cohésion, les cassures seront plus nombreuses sans doute, mais elles resteront franches et ne produiront que peu de fragments ou débris inutilisables. Mais quand on considère les manutentions fréquentes auxquelles sont exposées les briquettes dans les wagons, la mise en parc, les chargement et déchargement, les arrimages, &c., quand on voit la difficulté pour les matelots de pouvoir manier plus d'une briquette à la fois, qu'elle soit de 9<sup>k</sup> ou de 3<sup>k</sup>, on se rend compte du temps beaucoup plus considérable employé dans ces différentes manipulations lorsque l'on opère avec des briquettes de 3<sup>k</sup> au lieu de briquettes de 9<sup>k</sup>.

En outre, pour un poids égal, la somme de surfaces et d'angles vulnérables par les chocs étant moindre pour les briquettes de 9<sup>k</sup> que pour celles de 3<sup>k</sup>, sous ce rapport encore, dans la Marine française on fait pencher légèrement la balance en faveur de la briquette de 9<sup>k</sup>.

Par les raisons ci-dessus émises touchant les situations respectives des fabricants de briquettes, la fabrication des briquettes de 6<sup>k</sup> est peu répandue en France, et l'usage dans la Marine français en a été par suite très restreint jusqu'à ce jour; elle semblerait par son poids devoir réaliser la moyenne des qualités des briquettes de 3<sup>k</sup> et de 9<sup>k</sup> réunies, mais la question de la plus grande rapidité de temps à mettre pour l'embarquement du combustible à bord des bâtiments est considérée comme trop importante pour ne pas pouvoir affirmer que la briquette de 9<sup>k</sup> sera toujours préférée aux autres briquettes de moindre poids.





RETURN of all EXPERIMENTS made by the  
ADMIRALTY on COAL and PATENT FUEL since  
the Date of the last Return, the 9th of March  
1876; and, Copy of any CORRESPONDENCE  
having special Reference to the relative Value  
of various COALS and PATENT FUELS.

(*Mr. Hussey Vivian.*)

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*Ordered, by The House of Commons, to be Printed,  
6 August 1877.*

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[*Price 6 d.*]

397.

*Under 6 oz.*

NAVY (CONTAGIOUS DISEASES).

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373

RETURN to an Order of the Honourable The House of Commons,  
dated 4 July 1877 ;—*for*,

RETURN “showing the Number of Cases of VENEREAL DISEASES in Her Majesty’s Ships and Vessels stationed at Five Home Ports, at which the Contagious Diseases Acts have been and are in operation, and the Number of Cases in Her Majesty’s Ships and Vessels at Five Home Ports at which the Contagious Diseases Acts have never been applied, from the Year 1860 to the Year 1875, inclusive ; together with the Ratios per Thousand of Force for each Year at each Port, and the Total Ratios for the Ports under the Acts, and the Ports not under the Acts.”

(*Sir Harcourt Johnstone.*)

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*Ordered, by The House of Commons, to be Printed,*  
*25 July 1877.*

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RETURNS showing the Number of Cases of VENEREAL DISEASES in Her Majesty's Ships and Vessels stationed at Five Home Ports, at which the Contagious Diseases Acts have been and are in operation; and the Number of Cases in Her Majesty's Ships and Vessels at Five Home Ports at which the Contagious Diseases Acts have never been applied, from the Year 1860 to the Year 1875, inclusive; together with the Ratios per Thousand of Force for each Year, at each Port, and the Total Ratios for the Ports under the Acts, and the Ports not under the Acts.

# PORTS UNDER THE ACTS.

## DARTMOUTH.

Year.	SHIP.	Period of Stay.	Average Complement Corrected for Time.	Number of Cases.		
				Primary Syphilis.	Secondary Syphilis.	Gonorrhoea.
1863	Britannia - - -	3 months - - -	100	4		2
1864	" - - -	Year - - -	450	33		1
1865	" - - -	" - - -	440	27		6
1866	" - - -	" - - -	420	12	-	3
1867	" - - -	" - - -	405	2	-	1
1868	" - - -	" - - -	400	1	1	4
1869	" - - -	" - - -	380	3	1	4
1870	" - - -	" - - -	360	4	-	2
1871	" - - -	" - - -	360	2	2	1
1872	" - - -	" - - -	385	-	3	1
1873	" - - -	" - - -	370	3	4	3
1874	" - - -	" - - -	370	4	3	1
1875	" - - -	" - - -	335	3	3	5

## PLYMOUTH.

1860	Cambridge - - -	Year - - -	370	39		5
	Geyser - - -	6 months - - -	75	17		2
	Implacable - - -	8 months - - -	220	-		-
	Impregnable - - -	Year - - -	755	38		13
	Nautilus - - -	11 months - - -	90	-		1
	Royal Adelaide - - -	Year - - -	515	53		25
	Wellington - - -	" - - -	565	23		7
1861	Cambridge - - -	Year - - -	560	36		3
	Geyser - - -	" - - -	160	26		2
	Implacable - - -	" - - -	420	1		6
	Impregnable - - -	" - - -	615	21		9
	Indus - - -	" - - -	950	54		31
	Nautilus - - -	" - - -	80	-		1
	Royal Adelaide - - -	" - - -	600	63		33
1862	Wellington - - -	6 months - - -	165	2		1
	Cambridge - - -	Year - - -	670	60		18
	Implacable - - -	" - - -	390	2		-
	Impregnable - - -	" - - -	560	4		4
	Indus - - -	" - - -	1,450	75		42
	Royal Adelaide - - -	" - - -	670	146		80
	Squirrel - - -	" - - -	85	-		-
1863	Cambridge - - -	Year - - -	660	71		26
	Canopus - - -	6 Feb. to 31 Dec. - - -	305	95		37
	Implacable - - -	Year - - -	410	2		3
	Impregnable - - -	" - - -	650	3		6
	Indus - - -	" - - -	1,460	86		29
	Royal Adelaide - - -	" - - -	400	80		34
	Squirrel - - -	" - - -	340	-		-

PORTS UNDER THE ACTS—PLYMOUTH—*continued*.

Year.	SHIP.	Period of Stay.	Average Complement Corrected for Time.	Number of Cases.		
				Primary Syphilis.	Secondary Syphilis.	Gonorrhoea.
1864	Cambridge - - -	Year - - -	510	62		36
	Canopus - - -	" - - -	300	110		4
	Implacable - - -	" - - -	440	2		13
	Impregnable - - -	" - - -	700	7		4
	Indus - - -	" - - -	1,185	77		25
	Martin - - -	7 July to 31 Dec. -	65	-	-	1
	Royal Adelaide -	Year - - -	335	32		9
1865	Squirrel - - -	" - - -	130	-		-
	Cambridge - - -	Year - - -	650	74		28
	Canopus - - -	" - - -	355	108		12
	Implacable - - -	" - - -	405	1		3
	Impregnable - - -	" - - -	755	4		3
	Indus - - -	" - - -	1,100	58		38
	Martin - - -	" - - -	60	-		-
1866	Royal Adelaide -	" - - -	340	27		5
	Squirrel - - -	" - - -	130	2		-
	Cambridge - - -	Year - - -	770	42	13	21
	Canopus - - -	" - - -	465	73	9	10
	Implacable - - -	" - - -	450	1	-	7
	Impregnable - - -	" - - -	830	-	5	4
	Indus - - -	" - - -	1,065	44	14	12
1867	Royal Adelaide -	" - - -	320	15	8	3
	Sealark - - -	1 June to 31 Dec. -	55	-	1	-
	Squirrel - - -	Year - - -	70	-	-	-
	Cambridge - - -	Year - - -	800	22	7	12
	Canopus - - -	" - - -	440	26	4	18
	Implacable - - -	" - - -	500	2	-	2
	Impregnable - - -	" - - -	800	7	-	3
1868	Indus - - -	" - - -	940	24	10	14
	Royal Adelaide -	" - - -	330	6	4	4
	Sealark - - -	" - - -	80	-	-	-
	Squirrel - - -	" - - -	120	-	-	1
	Cambridge - - -	Year - - -	780	11	11	21
	Canopus - - -	1 Jan. to 30 Sept. -	350	5	4	13
	Implacable - - -	Year - - -	500	4	-	7
1869	Impregnable - - -	" - - -	820	3	2	11
	Indus - - -	" - - -	1,050	34	22	40
	Lion - - -	1 Oct. to 31 Dec. -	110	8	6	7
	Royal Adelaide -	Year - - -	480	7	-	5
	Sealark - - -	" - - -	115	1	-	1
	Squirrel - - -	" - - -	110	1	-	-
	Cambridge - - -	Year - - -	785	20	5	29
1870	Implacable - - -	" - - -	550	3	1	4
	Impregnable - - -	" - - -	900	4	1	8
	Indus - - -	" - - -	1,020	25	16	40
	Lion - - -	1 Jan. to 1 Nov. -	445	26	6	18
	Royal Adelaide -	Year - - -	775	21	3	12
	Sealark - - -	" - - -	115	-	-	-
	Squirrel - - -	" - - -	100	-	-	-
1871	Cambridge - - -	Year - - -	910	10	2	23
	Implacable - - -	" - - -	610	-	2	1
	Impregnable - - -	" - - -	1,010	6	1	1
	Indus - - -	" - - -	1,085	24	5	37
	Royal Adelaide -	" - - -	650	53	10	81
	Sealark - - -	1 Jan. to 30 Nov. -	95	1	-	-
	Squirrel - - -	1 Jan. to 31 Oct. -	110	-	-	-
1871	Cambridge - - -	Year - - -	995	23	6	16
	Implacable - - -	" - - -	1,025	2	-	1
	Impregnable - - -	" - - -	1,055	6	3	8
	Indus - - -	" - - -	1,225	21	9	37
	Royal Adelaide -	" - - -	850	53	32	163
	Sealark - - -	1 April to 23 Nov. -	70	-	-	-
	Squirrel - - -	4 April to 23 Nov. -	90	-	-	2

PORTS UNDER THE ACTS—PLYMOUTH—*continued.*

Year.	S H I P.	Period of Stay.	Average Complement Corrected for Time.	Number of Cases.		
				Primary Syphilis.	Secondary Syphilis.	Gonorrhoea.
1872	Cambridge - - -	Year - - -	980	15	3	43
	Implacable - - -	" - - -	1,090	4	2	9
	Impregnable - - -	" - - -	1,030	3	1	6
	Indus - - -	" - - -	1,260	23	4	36
	Royal Adelaide - - -	" - - -	920	73	52	207
	Sealark - - -	15 April to 30 Sept. -	55	-	-	-
1873	Squirrel - - -	7 April to 31 Dec. -	100	-	-	-
	Cambridge - - -	Year - - -	970	25	10	43
	Implacable - - -	" - - -	1,100	5	4	14
	Impregnable - - -	" - - -	1,030	6	6	24
	Indus - - -	" - - -	1,140	13	4	42
	Royal Adelaide - - -	" - - -	990	77	59	243
1874	Sealark - - -	7 April to 30 Sept. -	45	2	-	-
	Squirrel - - -	2 April to 31 Oct. -	20	-	-	-
	Cambridge - - -	Year - - -	880	40	13	47
	Implacable - - -	" - - -	1,045	5	2	19
	Impregnable - - -	" - - -	1,040	5	1	21
	Indus - - -	" - - -	1,100	20	19	50
1875	Royal Adelaide - - -	" - - -	970	95	17	235
	Sealark - - -	1 April to 15 Dec. -	75	-	-	1
	Squirrel - - -	13 April to 7 Nov. -	90	-	-	2
	Cambridge - - -	Year - - -	880	42	8	56
	Implacable - - -	" - - -	1,080	5	1	21
	Impregnable - - -	" - - -	985	5	2	25
	Indus - - -	" - - -	1,200	18	5	70
	Royal Adelaide - - -	" - - -	895	57	33	139
	Sealark - - -	10 April to 12 Oct. -	55	-	1	-
	Squirrel - - -	11 April to 12 Oct. -	65	-	-	2

PORTSMOUTH.

1860	Asia - - -	Year - - -	1,360	87	47
	Britannia - - -	" - - -	600	15	3
	Dasher - - -	" - - -	90	6	1
	Excellent - - -	" - - -	550	118	25
	Illustrious - - -	" - - -	360	10	-
	Rolla - - -	" - - -	80	-	-
	St. Vincent - - -	" - - -	180	9	1
	Sealark - - -	" - - -	90	11	10
	Victoria and Albert - - -	" - - -	175	1	-
	Victory - - -	" - - -	885	14	3
1861	Asia - - -	" - - -	1,500	113	65
	Britannia - - -	" - - -	520	19	3
	Dasher - - -	" - - -	120	5	1
	Excellent - - -	" - - -	900	115	11
	Illustrious - - -	6 months - - -	200	4	-
	Rolla - - -	Year - - -	90	-	-
	St. Vincent - - -	" - - -	635	49	44
	Sealark - - -	" - - -	100	10	7
	Victoria and Albert - - -	" - - -	180	3	1
	Victory - - -	" - - -	195	25	7
1862	Asia - - -	" - - -	1,730	172	46
	Dasher - - -	" - - -	130	4	1
	Excellent - - -	" - - -	950	84	25
	Rolla - - -	11 months - - -	70	-	-
	St. Vincent - - -	Year - - -	440	2	8
	Sealark - - -	" - - -	80	7	2
	Victoria and Albert - - -	" - - -	200	-	2
	Victory - - -	" - - -	930	199	40
	Asia - - -	" - - -	1,780	140	23
	Dasher - - -	" - - -	110	9	16
1863	Duke of Wellington - - -	8 months - - -	365	77	11
	Excellent - - -	Year - - -	920	92	25
	Osborne - - -	" - - -	85	5	-
	St. Vincent - - -	" - - -	500	1	2
	Sealark - - -	" - - -	75	-	-
	Victoria and Albert - - -	" - - -	180	2	1
	Victory - - -	" - - -	565	111	64

PORTS UNDER THE ACTS—PORTSMOUTH—*continued.*

Year.	S H I P.	Period of Stay.	Average Complement Corrected for Time.	Number of Cases.		
				Primary Syphilis.	Secondary Syphilis.	Gonorrhoea.
1864	Asia - - - -	Year - - - -	1,650	93		17
	Duke of Wellington -	" - - - -	390	89		16
	Excellent - - - -	" - - - -	900	93		16
	Osborne - - - -	" - - - -	85	3		1
	St. Vincent - - - -	" - - - -	615	15		13
	Sealark - - - -	" - - - -	80	—		—
	Victoria and Albert -	" - - - -	180	2		—
	Victory - - - -	" - - - -	375	49		20
1865	Asia - - - -	" - - - -	1,625	97		41
	Duke of Wellington -	" - - - -	420	105		32
	Excellent - - - -	" - - - -	1,095	115		32
	Osborne - - - -	" - - - -	80	5		—
	Royal Sovereign - -	" - - - -	160	33		4
	St. Vincent - - - -	" - - - -	610	15		10
	Sealark - - - -	" - - - -	75	—		—
	Victoria and Albert -	" - - - -	185	2		3
	Victory - - - -	" - - - -	385	55		11
1866	Asia - - - -	" - - - -	1,655	66	23	29
	Duke of Wellington -	" - - - -	485	75	27	19
	Excellent - - - -	" - - - -	1,320	70	40	21
	Martin - - - -	" - - - -	75	3	—	—
	Osborne - - - -	" - - - -	80	3	—	1
	Royal Sovereign - -	1 Jan. to 10 Oct. -	130	12	2	3
	St. Vincent - - - -	Year - - - -	700	24	—	10
	Victoria and Albert -	" - - - -	185	3	—	1
	Victory - - - -	" - - - -	390	27	17	7
1867	Asia - - - -	" - - - -	1,545	49	12	32
	Duke of Wellington -	" - - - -	510	76	27	8
	Excellent - - - -	" - - - -	1,195	45	21	21
	Martin - - - -	" - - - -	100	2	—	1
	Osborne - - - -	" - - - -	80	—	—	1
	St. Vincent - - - -	" - - - -	750	12	—	9
	Victoria and Albert -	" - - - -	185	1	—	1
	Victory - - - -	" - - - -	650	25	5	10
1868	Asia - - - -	" - - - -	1,360	56	14	36
	Duke of Wellington -	" - - - -	740	55	42	50
	Excellent - - - -	" - - - -	1,160	59	20	25
	Martin - - - -	9 months - - - -	75	—	1	—
	St. Vincent - - - -	Year - - - -	830	12	1	13
	Victoria and Albert -	" - - - -	220	2	—	2
	Victory - - - -	" - - - -	520	18	12	26
1869	Asia - - - -	" - - - -	1,050	41	13	44
	Duke of Wellington -	" - - - -	870	73	36	89
	Excellent - - - -	" - - - -	1,020	55	16	49
	Martin - - - -	" - - - -	85	—	—	3
	St. Vincent - - - -	" - - - -	840	5	2	8
	Victoria and Albert -	" - - - -	165	1	1	—
	Victory - - - -	1 Jan. to 28 Feb. -	70	—	1	5
1870	Asia - - - -	Year - - - -	1,080	30	7	66
	Duke of Wellington -	" - - - -	1,055	115	44	232
	Excellent - - - -	" - - - -	1,115	36	13	52
	Martin - - - -	5 April to 10 Nov. -	90	—	—	—
	St. Vincent - - - -	Year - - - -	815	3	1	13
	Victoria and Albert -	" - - - -	180	1	—	—
1871	Asia - - - -	" - - - -	1,330	26	8	71
	Duke of Wellington -	" - - - -	1,130	104	37	245
	Excellent - - - -	" - - - -	1,110	45	22	64
	Martin - - - -	27 Mar. to 27 Nov. -	80	—	—	1
	St. Vincent - - - -	Year - - - -	860	4	—	5
	Victoria and Albert -	" - - - -	210	—	—	2



PORTS UNDER THE ACTS—PORTSMOUTH—*continued.*

Year.	S H I P.	Period of Stay.	Average Complement Corrected for Time.	Number of Cases.		
				Primary Syphilis.	Secondary Syphilis.	Gonorrhoea.
1872	Asia - - -	Year - - -	1,165	23	13	58
	Duke of Wellington -	" - - -	1,320	173	40	370
	Excellent - - -	" - - -	1,200	72	27	72
	Martin - - -	1 April to 11 Nov. -	80	1	1	2
	St. Vincent - - -	Year - - -	795	1	4	10
	Victoria and Albert -	" - - -	210	1	1	-
1873	Asia - - -	" - - -	1,020	36	17	77
	Duke of Wellington -	" - - -	1,210	115	31	165
	Excellent - - -	" - - -	1,140	56	25	55
	Martin - - -	1 June to 31 Oct. -	55	-	-	-
	St. Vincent - - -	Year - - -	900	3	2	6
	Victoria and Albert -	" - - -	195	2	-	1
1874	Victory - - -	16 Oct. to 31 Dec. -	20	2	1	6
	Asia - - -	Year - - -	1,165	16	7	65
	Duke of Wellington -	" - - -	985	61	20	129
	Enchantress - - -	2 Jan. to 31 May -	30	-	-	1
	Excellent - - -	Year - - -	1,055	68	25	90
	Martin - - -	2 April to 17 Nov. -	90	-	-	-
1875	Osborne - - -	12 June to 31 Dec. -	70	-	-	-
	St. Vincent - - -	Year - - -	920	2	11	5
	Victoria and Albert -	" - - -	200	2	1	1
	Victory - - -	" - - -	70	2	1	15
	Vigilant - - -	1 Jan. to 31 March -	20	-	-	-
	Asia - - -	Year - - -	1,140	22	6	70
1875	Duke of Wellington -	" - - -	965	46	25	104
	Excellent - - -	" - - -	1,050	39	32	124
	Martin - - -	1 April to 31 Dec. -	85	-	-	5
	Osborne - - -	1 Jan. to 30 June -	60	-	-	-
	St. Vincent - - -	Year - - -	910	3	-	1
	Victoria and Albert -	" - - -	200	-	-	1
1875	Victory - - -	" - - -	95	1	4	5

QUEENSTOWN (CORK).

1860	Ferret - - -	Year - - -	95	2	-	-
	Hawke - - -	" - - -	340	27	-	5
1861	Ferret - - -	" - - -	100	1	-	3
	Hawke - - -	" - - -	355	26	-	7
	Sanspariel - - -	6 months - - -	280	26	-	3
1862	Ferret - - -	Year - - -	115	1	-	1
	Hastings - - -	6 months - - -	70	5	-	4
	Hawke - - -	Year - - -	360	20	-	5
1863	Ferret - - -	" - - -	115	-	-	-
	Hastings - - -	" - - -	220	9	-	3
	Hawke - - -	" - - -	380	11	-	2
1864	Ferret - - -	6 months - - -	50	-	-	-
	Hastings - - -	Year - - -	230	13	-	5
	Hawke - - -	" - - -	400	14	-	2
1865	Frederick William -	9 months - - -	240	36	-	8
	Hastings - - -	Year - - -	176	21	-	5
	Hawke - - -	1 Jan. to 24 March -	65	1	-	1
1866	Black Prince - - -	18 May to 31 Dec. -	370	12	1	3
	Frederick William -	Year - - -	350	13	3	-
	Hastings - - -	1 Jan. to 18 May -	120	-	-	1
1867	Black Prince - - -	1 Jan. to 30 June -	290	5	-	5
	Mersey - - -	1 Aug. to 31 Dec. -	210	12	3	2
	Warrior - - -	1 July to 31 July -	50	9	1	3
1868	Mersey - - -	Year - - -	450	8	6	4
	Orwell - - -	" - - -	40	2	2	1

PORTS UNDER THE ACTS—QUEENSTOWN (CORK)—*continued.*

Year.	S H I P.	Period of Stay.	Average Complement Corrected for Time.	Number of Cases.		
				Primary Syphilis.	Secondary Syphilis.	Gonorrhoea.
1869	Mersey - - -	Year - - -	350	5	7	6
	Orwell - - -	" - - -	40	-	1	-
1870	Mersey - - -	" - - -	430	17	3	18
	Orwell - - -	" - - -	40	1	-	1
1871	Mersey - - -	" - - -	440	12	9	9
	Orwell - - -	" - - -	40	2	-	-
1872	Mersey - - -	1 Jan. to 15 Aug. -	220	5	1	8
	Revenge - - -	16 Aug. to 31 Dec. -	210	5	4	7
1873	" - - -	Year - - -	610	30	9	31
1874	" - - -	" - - -	445	11	6	18
1875	Goshawk - - -	3 months - - -	20	-	1	1
	Revenge - - -	Year - - -	325	5	4	6

## SOUTHAMPTON.

1860	Dauntless - - -	Year - - -	165	11	-	2
1861	" - - -	" - - -	165	8	-	3
	Eagle - - -	" - - -	275	6	-	-
1862	Boscawen - - -	8 months - - -	250	1	-	3
	Dauntless - - -	Year - - -	180	13	-	7
	Eagle - - -	6 months - - -	15	-	-	-
1863	Boscawen - - -	Year - - -	380	10	-	-
	Dauntless - - -	" - - -	210	22	-	1
1864	Boscawen - - -	" - - -	480	9	-	5
	Dauntless - - -	1 Jan. to 31 Mar. -	55	7	-	1
	Ferret - - -	1 July to 31 Dec. -	50	1	-	-
	Irresistible - - -	1 April to 31 Dec. -	225	44	-	7
1865	Boscawen - - -	Year - - -	400	3	-	3
	Ferret - - -	" - - -	80	4	-	2
	Irresistible - - -	" - - -	315	37	-	6
1866	Boscawen - - -	1 Jan. to 31 Aug. -	265	1	-	1
	Ferret - - -	" - - -	45	1	-	1
	Irresistible - - -	Year - - -	380	13	8	5
1867	" - - -	" - - -	320	13	10	6
1868	Hector - - -	1 May to 31 Dec. -	220	24	6	11
	Irresistible - - -	1 Jan. to 30 April -	115	11	4	4
1869	Hector - - -	Year - - -	420	29	14	10
1870	" - - -	" - - -	375	13	7	7
1871	" - - -	" - - -	390	13	7	5
1872	" - - -	" - - -	455	14	4	3
1873	" - - -	" - - -	500	13	5	6
1874	" - - -	" - - -	535	9	3	9
1875	" - - -	" - - -	315	5	3	4

PORTS NOT UNDER THE ACTS.

GREENOCK.

Year.	S H I P.	Period of Stay.	Average Complement corrected for Time.	Number of Cases.		
				Primary Syphilis.	Secondary Syphilis.	Gonorrhoea.
1860	Athol - - -	Year - - -	20	1		-
	Hogue - - -	" - - -	330	14		4
1861	" - - -	" - - -	360	10		5
1862	" - - -	" - - -	350	17		9
1863	" - - -	" - - -	380	31		15
1864	" - - -	1 Jan. to 30 June -	170	18		4
	Lion - - -	1 July to 31 Dec. -	180	15		3
1865	" - - -	Year - - -	355	24		8
1866	" - - -	" - - -	290	5	8	1
1867	" - - -	" - - -	350	11	10	5
1868	" - - -	1 Jan. to 8 Sept. -	245	9	7	3
	Black Prince - - -	9 Sept. to 31 Dec. -	110	10	2	5
1869	" - - -	Year - - -	430	16	10	19
1870	" - - -	" - - -	335	16	11	12
1871	" - - -	" - - -	335	17	12	14
1872	" - - -	" - - -	350	19	7	18
1873	" - - -	" - - -	440	30	11	25
1874	" - - -	1 Jan. to 8 May -	95	6	1	5
	Aurora - - -	9 May to 31 Dec. -	250	16	6	28
1875	" - - -	Year - - -	390	45	3	40

H U L L.

1860	Cornwallis - - -	Year - - -	335	42		12
1861	" - - -	" - - -	240	75		20
1862	" - - -	" - - -	220	23		6
1863	" - - -	" - - -	230	60		23
1864	" - - -	1 Jan. to 31 Mar. -	50	9		4
	Dauntless - - -	1 April to 31 Dec. -	160	23		3
1865	" - - -	Year - - -	215	34		2
1866	" - - -	" - - -	210	20	4	6
1867	" - - -	" - - -	265	17	2	11
1868	" - - -	" - - -	170	20	5	12
1869	" - - -	" - - -	210	26	-	24
1870	Wivern - - -	1 Jan. to 12 Oct. -	135	18	6	13
	Invincible - - -	13 Oct. to 31 Dec. -	80	6	5	4
1871	" - - -	1 Jan. to 22 Nov. -	355	55	16	12
	Audacious - - -	23 Nov. to 31 Dec. -	25	4	10	3
1872	" - - -	Year - - -	410	54	44	30
1873	" - - -	" - - -	420	42	12	19
1874	" - - -	1 Jan. to 31 Mar. -	80	9	-	2
	Newcastle - - -	1 April to 24 Aug. -	135	23	-	4
	Endymion - - -	25 Aug to 31 Dec. -	115	10	1	-
1875	" - - -	1 Jan. to 24 July -	175	21	-	3
	Iron Duke - - -	25 July to 30 Sept. -	100	2	-	-
	Endymion - - -	1 Oct. to 31 Dec. -	90	5	-	1

## PORTS NOT UNDER THE ACTS—continued.

## KINGSTOWN (DUBLIN).

Year.	S H I P.	Period of Stay.	Average Complement corrected for Time.	Number of Cases.		
				Primary Syphilis.	Secondary Syphilis.	Gonorrhoea.
1860	Ajax - - -	Year - - -	445	15		3
1861	" - - -	" - - -	450	9		6
1862	" - - -	" - - -	420	17		9
1863	" - - -	" - - -	340	22		5
1864	" - - -	1 Jan. to 31 Mar. -	70	3		-
	Royal George - -	1 April to 31 Dec. -	225	24		9
1865	" - - -	Year - - -	325	19		8
1866	" - - -	" - - -	280	22	7	10
1867	" - - -	" - - -	300	23	19	20
1868	" - - -	" - - -	315	29	16	14
1869	" - - -	" - - -	325	19	11	9
1870	Pallas - - -	1 Jan. to 30 Sept. -	250	11	17	6
	Audacious - - -	1 Oct. to 31 Dec. -	95	10	9	4
1871	" - - -	1 Jan. to 5 July -	165	4	14	10
	Vanguard - - -	6 July to 31 Dec. -	160	7	5	12
1872	" - - -	Year - - -	380	9	16	24
1873	" - - -	" - - -	400	21	4	14
1874	" - - -	" - - -	450	12	4	8
1875	" - - -	1 Jan. to 30 Sept. -	300	19	9	32
	Iron Duke - - -	1 Oct. to 31 Dec. -	80	6	-	11

## LEITH.

1860	Edinburgh - - -	Year - - -	320	7		1
1861	" - - -	" - - -	230	6		3
1862	" - - -	" - - -	270	6		4
1863	" - - -	" - - -	400	23		9
1864	" - - -	1 Jan. to 29 Feb. -	50	2		1
	Trafalgar - - -	1 Mar. to 31 Dec. -	240	10		1
1865	" - - -	Year - - -	310	22		6
1866	" - - -	" - - -	320	10	5	1
1867	" - - -	1 Jan. to 15 June -	200	-	-	1
	Duncan - - -	16 June to 31 Dec. -	250	9	2	4
1868	" - - -	Year - - -	390	6	1	3
1869	" - - -	" - - -	370	26	4	14
1870	" - - -	1 Jan. to 28 Feb. -	55	11	3	4
	Repulse - - -	1 Mar. to 31 Dec. -	310	10	1	15
1871	" - - -	Year - - -	225	16	2	4
1872	" - - -	1 Jan. to 22 Mar. -	50	6	1	2
	Favourite - - -	23 Mar. to 31 Dec. -	190	10	1	6
1873	" - - -	Year - - -	260	16	13	5
1874	" - - -	" - - -	260	21	9	8
1875	" - - -	" - - -	290	13	4	6



PORTS NOT UNDER THE ACTS—continued.

LIVERPOOL.

Year.	S H I P.	Period of Stay.	Average Complement corrected for Time.	Number of Cases.		
				Primary Syphilis.	Secondary Syphilis.	Gonorrhœa.
1860	Majestic - - -	11 months - -	255	21		23
1861	" - - -	Year - - -	275	13		12
	Hastings - - -	8 months - -	35	2		1
1862	Majestic - - -	Year - - -	360	25		9
	Hastings - - -	6 months - -	25	-	-	2
	Eagle - - -	" - - -	15	1		-
1863	Majestic - - -	Year - - -	345	29		14
	Eagle - - -	" - - -	30	—		-
1864	Majestic - - -	8 months - -	215	36		9
	Eagle - - -	Year - - -	30	—		-
	Donegal - - -	4 months - -	135	30		5
1865	Eagle - - -	Year - - -	35	1		-
	Donegal - - -	" - - -	315	39		18
1866	Eagle - - -	" - - -	35	-	-	-
	Donegal - - -	" - - -	300	17	1	8
1867	Eagle - - -	" - - -	35	8	2	14
	Donegal - - -	" - - -	370	31	9	8
1868	Eagle - - -	" - - -	30	-	-	4
	Donegal - - -	" - - -	380	17	8	9
1869	Eagle - - -	" - - -	35	-	-	-
	Donegal - - -	6 months - -	190	7	2	6
	Resistance - - -	" - - -	190	16	4	6
1870	Eagle - - -	Year - - -	35	-	-	-
	Resistance - - -	" - - -	310	28	18	24
1871	Eagle - - -	" - - -	35	-	-	-
	Resistance - - -	" - - -	350	21	8	16
1872	Eagle - - -	" - - -	35	-	-	-
	Resistance - - -	" - - -	350	29	8	35
1873	Eagle - - -	" - - -	35	-	-	-
	Resistance - - -	6 months - -	160	8	4	11
	Caledonia - - -	" - - -	210	5	1	8
1874	Eagle - - -	Year - - -	35	1	-	-
	Caledonia - - -	" - - -	370	19	5	21
1875	Eagle - - -	" - - -	40	1	-	-
	Caledonia - - -	1 Jan. to 12 April -	100	5	2	4
	Achilles - - -	12 April to 31 Dec. -	280	18	7	29

TABLES showing the Ratio per 1,000 of Force of Cases of VENEREAL DISEASES at each Port included in the foregoing Tables, from 1860 to 1875, inclusive.

### PORTS UNDER THE ACTS.

#### DARTMOUTH.

Y E A R.	Syphilis. Ratio per 1,000 of Force.		Gonorrhœa. Ratio per 1,000 of Force.	Y E A R.	Syphilis. Ratio per 1,000 of Force.		Gonorrhœa. Ratio per 1,000 of Force.
	Primary.	Secondary.			Primary.	Secondary.	
1863 - - -	40		20	1870 - - -	11.11	-	5.55
1864 - - -	73.33		2.22	1871 - - -	5.55	5.55	2.77
1865 - - -	61.36		13.63	1872 - - -	-	7.79	2.59
1866 - - -	28.57	-	7.14	1873 - - -	8.1	10.81	8.1
1867 - - -	4.93	-	2.46	1874 - - -	10.81	8.1	2.7
1868 - - -	2.5	2.5	10	1875 - - -	8.95	8.95	14.92
1869 - - -	7.89	2.63	10.52				

#### PORTSMOUTH.

1860 - - -	62.01		20.59	1868 - - -	41.18	18.34	30.98
1861 - - -	76.73		31.09	1869 - - -	42.68	16.82	48.29
1862 - - -	103.31		27.37	1870 - - -	42.67	14.99	83.73
1863 - - -	95.41		31	1871 - - -	37.92	14.19	82.2
1864 - - -	80.46		19.41	1872 - - -	56.81	18.02	107.33
1865 - - -	92.12		28.69	1873 - - -	47.13	16.74	68.28
1866 - - -	56.26	21.66	18.09	1874 - - -	32.79	14.11	66.44
1867 - - -	41.87	12.96	16.55	1875 - - -	24.63	14.87	68.81

#### PLYMOUTH.

1860 - - -	65.63		20.46	1868 - - -	17.14	10.42	24.33
1861 - - -	57.18		24.22	1869 - - -	21.1	6.82	23.66
1862 - - -	75.03		37.64	1870 - - -	21.02	4.47	31.99
1863 - - -	79.76		31.95	1871 - - -	19.77	9.41	42.74
1864 - - -	79.12		25.10	1872 - - -	21.71	11.4	55.38
1865 - - -	72.2		23.45	1873 - - -	24.17	15.67	69.12
1866 - - -	43.47	12.42	14.16	1874 - - -	31.73	10	72.11
1867 - - -	21.69	6.23	13.46	1875 - - -	24.61	9.68	60.65

PORTS UNDER THE ACTS—*continued.*

QUEENSTOWN (CORK).

Y E A R.	Syphilis. Ratio per 1,000 of Force.		Gonorrhœa. Ratio per 1,000 of Force.	Y E A R.	Syphilis. Ratio per 1,000 of Force.		Gonorrhœa. Ratio per 1,000 of Force.
	Primary.	Secondary.			Primary.	Secondary.	
860 - - -		66·66	11·49	1868 - - -	20·4	16·32	10·2
861 - - -		72·1	17·68	1869 - - -	12·82	20·51	15·38
862 - - -		47·7	18·34	1870 - - -	38·29	6·38	40·42
863 - - -		27·97	6·99	1871 - - -	29·16	18·75	18·75
864 - - -		39·7	10·29	1872 - - -	23·25	11·62	34·88
865 - - -		122·1	29·47	1873 - - -	49·18	14·75	50·81
866 - - -	29·76	4·76	4·76	1874 - - -	24·71	13·48	40·44
867 - - -	47·27	7·27	18·18	1875 - - -	14·49	14·49	20·28

SOUTHAMPTON.

860 - - -		66·66	12·12	1868 - - -	104·47	29·85	44·77
861 - - -		31·81	6·81	1869 - - -	69·04	33·33	23·8
862 - - -		31·46	22·47	1870 - - -	34·66	18·66	18·66
863 - - -		54·23	1·69	1871 - - -	33·33	17·94	12·82
864 - - -		75·3	16·04	1872 - - -	30·76	8·79	6·59
865 - - -		55·34	13·83	1873 - - -	26·	10·	12·
866 - - -	23·43	12·5	10·93	1874 - - -	16·82	5·6	16·82
867 - - -	40·62	31·25	18·75	1875 - - -	15·87	9·52	12·69

PORTS NOT UNDER THE ACTS.

GREENOCK.

Y E A R.	Syphilis. Ratio per 1,000 of Force.		Gonorrhœa. Ratio per 1,000 of Force.	Y E A R.	Syphilis. Ratio per 1,000 of Force.		Gonorrhœa. Ratio per 1,000 of Force.
	Primary.	Secondary.			Primary.	Secondary.	
860 - - -		42·85	11·42	1868 - - -	53·52	25·35	22·53
861 - - -		27·77	13·88	1869 - - -	37·2	23·25	44·18
862 - - -		48·57	25·71	1870 - - -	47·76	32·83	35·81
863 - - -		81·57	39·47	1871 - - -	50·74	35·81	41·79
864 - - -		94·28	20·	1872 - - -	54·28	20·	51·42
865 - - -		67·6	22·53	1873 - - -	68·18	25·	56·81
866 - - -	17·24	27·58	3·44	1874 - - -	63·76	20·28	95·65
867 - - -	31·42	28·57	14·28	1875 - - -	115·38	7·69	102·56

H U L L.

860 - - -		125·37	35·82	1868 - - -	117·64	29·41	70·58
861 - - -		312·5	83·33	1869 - - -	123·81	-	114·28
862 - - -		104·54	27·27	1870 - - -	111·62	51·16	79·06
863 - - -		260·86	100·	1871 - - -	155·26	68·42	39·47
864 - - -		152·38	33·33	1872 - - -	131·7	107·31	73·17
865 - - -		158·13	9·3	1873 - - -	100·	28·57	45·23
866 - - -	95·23	19·04	28·57	1874 - - -	127·27	3·03	18·18
867 - - -	64·15	7·54	41·5	1875 - - -	76·71	-	10·95

PORTS NOT UNDER THE ACTS—*continued.*

## KINGSTOWN (DUBLIN).

Y E A R.	Syphilis. Ratio per 1,000 of Force.		Gonorrhoea. Ratio per 1,000 of Force.	Y E A R.	Syphilis. Ratio per 1,000 of Force.		Gonorrhoea. Ratio per 1,000 of Force.
	Primary.	Secondary.			Primary.	Secondary.	
1860 - - -		33·7	6·74	1868 - - -	92·06	50·79	44·44
1861 - - -		20·	13·83	1869 - - -	58·46	33·84	27·69
1862 - - -		40·57	21·42	1870 - - -	60·86	75·36	28·98
1863 - - -		64·7	14·7	1871 - - -	33·84	58·46	67·69
1864 - - -		91·52	30·5	1872 - - -	23·68	42·1	63·15
1865 - - -		58·46	24·61	1873 - - -	52·5	10·	35·
1866 - - -	78·57	25·	35·71	1874 - - -	26·66	8·88	17·77
1867 - - -	76·66	63·33	66·66	1875 - - -	65·78	23·68	113·15

## L E I T H.

1860 - - -		21·87	3·12	1868 - - -	15·38	2·56	7·69
1861 - - -		26·08	13·04	1869 - - -	70·27	10·81	37·83
1862 - - -		22·22	14·81	1870 - - -	57·53	10·95	52·05
1863 - - -		57·5	22·5	1871 - - -	71·11	8·88	17·77
1864 - - -		41·37	6·89	1872 - - -	66·66	8·33	33·33
1865 - - -		70·96	19·35	1873 - - -	61·53	50·	19·23
1866 - - -	31·25	15·62	3·12	1874 - - -	80·76	34·61	30·76
1867 - - -	20·	4·44	11·11	1875 - - -	44·82	13·79	20·68

## L I V E R P O O L.

1860 - - -		82·35	90·19	1868 - - -	41·46	19·51	31·7
1861 - - -		48·38	41·93	1869 - - -	55·42	14·45	28·91
1862 - - -		65·	27·5	1870 - - -	81·15	52·17	69·56
1863 - - -		77·33	37·33	1871 - - -	54·54	20·77	41·55
1864 - - -		173·68	36·84	1872 - - -	75·32	20·77	90·9
1865 - - -		114·28	51·42	1873 - - -	32·09	12·34	46·91
1866 - - -	50·74	2·98	23·88	1874 - - -	49·38	12·34	51·85
1867 - - -	96·29	27·16	54·32	1875 - - -	57·14	21·42	78·57



# SUMMARY.

## PORTS UNDER THE ACTS.

PERIOD.	Average Complement corrected for Time.	Cases of Syphilis.	Ratio per 1,000 of Force.	Cases of Gonorrhœa.	Ratio per 1,000 of Force.
No Acts in force - 1860-63	9,050	- - - - 679	- - 75·02	240	26·51
Act of 1864 in force - 1864-65	10,010	- - - - 792	- - 79·12	224	22·37
Acts of 1866 and 1869 in force - - -	1866-70	10,340 { Primary - 359 } 488 { Secondary - 129 }	{ 34·72 } 47·19 { 12·47 }	292	28·23
	1871-75	11,175 { Primary - 341 } 487 { Secondary - 146 }	{ 30·51 } 43·57 { 13·06 }	705	63·08

## PORTS NOT UNDER THE ACTS.

No Acts in force	{	1860-63	1,670	-	-	-	-	117	-	-	70·05	49	29·34		
		1864-65	1,540	-	-	-	-	154	-	-	100·	40	25·97		
		1866-70	1,640	{	Primary	-	97	}	139	{	59·14	}	84·74	60	36·58
					Secondary	-	42	}		{	25·6	}			
		1871-75	1,795	{	Primary	-	125	}	173	{	69·63	}	96·37	94	52·36
					Secondary	-	48	}		{	26·74	}			

## RATIOS OF SYPHILIS CONTRASTED.

PERIOD.	Ports under the Acts.	Ports not under the Acts.
No Acts in force - - - - 1860-63	75·02 - - - - -	70·05
Act of 1864 in force - - - - 1864-65	79·12 - - - - -	100·
Acts of 1866 and 1869 in force - - -	47·19 { Primary - - 34·72 } 84·74 { Primary - - 59·14 }	{ Secondary - - 12·47 }
	43·57 { Primary - - 30·51 } 96·37 { Primary - - 69·63 }	{ Secondary - - 13·06 }
		{ Secondary - - 26·74 }

### NOTE.

*Gonorrhœa.*—With reference to the apparent increase of gonorrhœa shown in the above Summary, it is necessary to note the fact that previous to the time of the passing of the Contagious Diseases Acts it was not the practice of the Navy to place cases of gonorrhœa, unless severe ones, upon the sick list; thus the majority of cases were not recorded. Since the passing of the Acts the attention of the medical officers has been more closely directed to venereal diseases, and a large number of cases of gonorrhœa have been brought under their notice which would otherwise not have been seen. The apparent increase of gonorrhœa which, it may be remarked, has taken place at all the stations, whether under the Acts or not under the Acts, may be attributed to the greater number of cases of gonorrhœa recorded, rather than to any real increase of disease.

A. Armstrong,  
Director General.

NAVY (CONTAGIOUS DISEASES).

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RETURN showing the Number of Cases of VENEREAL Diseases in Her Majesty's Ships and Vessels stationed at Five Home Ports, at which the Contagious Diseases Acts have been and are in operation, and the Number of Cases in Her Majesty's Ships and Vessels at Five Home Ports at which the Contagious Diseases Acts have never been applied, from the Year 1860 to the Year 1875, inclusive; together with the Ratios per Thousand of Force for each Year at each Port, and the Total Ratios for the Ports under the Acts, and the Ports not under the Acts.

(*Sir Harcourt Johnstone.*)

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*Ordered, by The House of Commons, to be Printed,  
25 July 1877.*

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RETURN to an Order of the Honourable The House of Commons,  
dated 22 March 1877 ;—for,

COPY “of an OFFICIAL MEMORANDUM issued at the ADMIRALTY on the  
16th day of December 1872, relating to the DUTIES of the CONSTRUCTIVE  
and ENGINEERING DEPARTMENT.”

Admiralty, }  
March 1877. }

THOS. WOLLEY,  
Chief Clerk.

Admiralty, 16 December 1872.

1. *The Chief Naval Architect* will be responsible to the Controller for all matters of design and construction in the hulls of ships and boats, including masting and all nautical apparatus, whether building in the dockyards or by contract.

No alteration is to be made in any ship under repair without its being submitted to him.

2. *The Engineer in Chief* will be responsible to the Controller for all matters of design and construction of steam machinery in ships and boats, and for the designs of all machinery for use in the dockyards.

No alteration is to be made in any machinery under repair without its being submitted to him.

3. *The Surveyor of Dockyards* will be responsible to the Controller for the maintenance and repairs of ships and boats, and of all steam machinery in ships, boats, and in the yards and factories, in a sound condition and fit for service; also for the details of the management of the yards, including the number, appropriation and pay of men, the economical working of manufactures, and the introduction and use of machinery in the yards, factories, and manufacturing shops.

4. For the above purposes the Chief Naval Architect will be assisted by two constructors, and by the surveyor and inspector of contract work.

The Engineer in Chief will be assisted by the Chief Inspector of Machinery afloat.

The Surveyor of Dockyards will be assisted by a professional shipwright assistant, an engineer assistant, and by the examiners of dockyard work.

5. The Chief Naval Architect, the Engineer in Chief, the Surveyor of Dockyards, the two constructors, and the professional assistants to the Surveyor of Dockyards, will form a Council of Construction, to whom may be submitted for opinion any questions affecting the designing and repairing of ships and engines, or the economy of manufacture in the dockyards, which the Controller, the Chief Naval Architect, the Engineer in Chief, or the Surveyor of Dockyards may desire.

6. The Chief Naval Architect will be President of the Council of Construction.

The opinion of the Council will not relieve the individual officers from the responsibility for work attaching to their several appointments; but in cases of  
conflict

conflict of opinion between these officers on points affecting two or more of them, the Council will advise the Controller.

7. The Chief Naval Architect, as President of the Council of Construction, will be responsible for the unity of action of the other officers above named.

All papers relating to the work of any of the above-named professional officers will be marked in the first instance to the Chief Naval Architect, who, with the aid of the Secretary of the Council, will pass them on to the officers whose duty it is to deal with them, and all outgoing papers from the above officers will also be sent to the Chief Naval Architect for information.

8. With the exception of letters which, under regulations issued from time to time, will be signed by the Secretaries, the Controller will sign all letters of importance emanating from his department according to his discretion. Other letters will be signed by the Director of Naval Ordnance, the Chief Naval Architect, the Chief Engineer, the Surveyor of Dockyards for Controller, or the Superintendent of Stores.

9. In the absence of the Controller, the Director of Naval Ordnance will act for him in respect of all matters relating to Ordnance, and the Chief Naval Architect, as President of the Council of Construction, will act for him in respect of all other matters in the Controller's Department.

10. In the absence of the Chief Naval Architect, the Surveyor of Dockyards will act for him. In the absence of the Engineer in Chief, the Engineer Assistant to the Surveyor will act for him. In the absence of the Surveyor of Dockyards, the Shipwright Assistant will act for him.

11. The Draughtsmen will, for the present, continue to form one staff under a single Chief Draughtsman. The Engineer's Draughtsmen being under the direct control of the Engineer in Chief, and the Constructor's Draughtsmen under the Constructor's; the President of the Council being generally responsible for the harmonious and efficient working of the whole staff.

12. The clerical staff of the Controller's Department, including the Store Branch, will, subject to the General Regulations of the office, be directly under the Controller.

They will execute all orders given to them by him, and by the officers authorised as above to sign for him.

Important drafts written upon the Minutes of the above officers will be submitted to them before signature.

13. The Surveyor of Contract Work, the Inspector of Machinery, and the Examiners of Dockyard Work, will give their assistance to the Council of Construction, or its members, as directed from time to time by the President of the Council.

By Command of their Lordships,

*Vernon Lushington.*





NAVY (CONTROLLERS DEPARTMENT).

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COPY of an OFFICIAL MEMORANDUM issued at  
the ADMIRALTY on 16 December 1872, relating  
to the DUTIES of the CONSTRUCTIVE and  
ENGINEERING DEPARTMENT.

(Mr. Seely.)

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*Ordered, by The House of Commons, to be Printed,  
26 March 1877.*

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# NAVY (CRIME AND PUNISHMENT).

593

RETURN to an Order of the Honourable The House of Commons,  
dated 6 April 1877 ;—for,

RETURN “of the Number of COURTS MARTIAL held upon SEAMEN of the ROYAL NAVY during the Year 1875 ; the OFFENCES for which the Men were Tried ; the SENTENCES Awarded ; and the PUNISHMENTS Inflicted at Home and Abroad : ”

“ Of the Number of SUMMARY PUNISHMENTS Inflicted : ”

“ And, similar RETURNS relating to the ROYAL MARINES (in continuation of Parliamentary Paper, No. 201, of Session 1876). ”

Admiralty,  
6 April 1877. }

THOS. WOLLEY,  
Chief Clerk.

## SEAMEN OF THE ROYAL NAVY.

RETURN of the Number of COURTS MARTIAL held during 1875, showing the OFFENCES for which the Men were Tried, the SENTENCES Awarded, and the PUNISHMENTS Inflicted, at Home and Abroad.

### PART I.—COURTS MARTIAL and OFFENCES.

	AT HOME.			ABROAD.			GENERAL TOTAL.
	Petty Officers and Seamen.	Marines Afloat.	Boys.	Petty Officers and Seamen.	Marines Afloat.	Boys.	
Number of Courts Martial* -	65	31	2	113	32	1	244
Offences against Discipline :							
Mutiny - - - -	-	-	-	-	-	-	-
Desertion - - - -	4	5	-	22	8	1	40
Striking and attempting to strike Superior Officer.	9	16	-	21	5	-	51
Threatening language to Superior Officer.	9	2	-	13	1	-	25
Wilful disobedience - -	28	12	-	38	7	-	85
Behaving with contempt to Superior Officer.	16	5	-	19	9	-	49
Quarrelling and fighting -	2	1	-	2	3	-	8
Improperly leaving place of duty.	8	3	-	21	7	-	39
Absence without leave -	4	2	-	2	2	-	10
Drunkenness - - - -	2	1	-	11	4	-	18
Using profane language -	-	-	-	-	-	-	-
Malingering - - - -	-	-	-	-	-	-	-
Act to prejudice of good order and naval discipline.	21	4	-	12	4	-	41
Offences punishable by Ordinary Law :							
Murder - - - - -	-	-	-	-	-	-	-
Manslaughter - - - -	-	-	-	-	-	-	-
Theft and embezzlement -	21	4	-	26	7	-	58
Disgraceful conduct - -	2	1	2	3	11	-	19
TOTAL OF OFFENCES - -	126	56	2	190	68	1	443

\* The column “ Number of Courts Martial,” shows the number of men tried, which was 26 in excess of the number of Courts Martial.

SEAMEN OF THE ROYAL NAVY—*continued.*

## PART II.—SENTENCES AWARDED.

	AT HOME.			ABROAD.			TOTAL.
	Petty Officers and Seamen.	Marines Afloat.	Boys.	Petty Officers and Seamen.	Marines Afloat.	Boys.	
Death - - - - -	-	-	-	-	-	-	-
Penal servitude - - - - -	1	2	-	4	5	-	12
Imprisonment with hard labour, solitary confinement, or both.	42	22	-	76	21	1	162
Imprisonment and dismissal with or without disgrace.	19	6	-	23	3	-	51
Confinement in cells on board - - - - -	-	-	-	1	-	-	1
Corporal punishment with cat, without imprisonment.	-	-	-	1	-	-	1
Corporal punishment with cat and imprisonment.	-	1	-	6	-	-	7
Corporal punishment with birch and imprisonment.	-	-	2	-	-	-	2
Dismissal - - - - -	-	-	-	-	-	-	-
Disrating - - - - -	1	-	-	2	-	-	3
Forfeiture of pay, prize money, &c. - - -	-	-	-	-	-	-	-
Severely reprimanded - - - - -	-	-	-	-	-	-	-
TOTAL of Sentences - - -	63	31	2	113	29	1	239
Acquitted - - - - -	2	-	-	-	3	-	5

## PART III.—PUNISHMENTS INFLICTED.

	AT HOME.			ABROAD.			TOTAL.
	Petty Officers and Seamen.	Marines Afloat.	Boys.	Petty Officers and Seamen.	Marines Afloat.	Boys.	
Death - - - - -	-	-	-	-	-	-	-
Penal servitude - - - - -	1	*1	-	*2	5	-	9
Dismissal with disgrace - - - - -	-	-	-	-	-	-	-
Imprisonment with hard labour, solitary confinement, or both.	44	23	-	83	21	1	172
Imprisonment and dismissal with or without disgrace.	†17	7	-	†18	3	-	45
Confinement in cells on board - - - - -	-	-	-	1	-	-	1
Corporal punishment with cat, without imprisonment.	-	-	-	1	-	-	1
Corporal punishment with cat and imprisonment.	-	†-	-	6	-	-	6
Corporal punishment with birch and imprisonment.	-	-	2	-	-	-	2
Dismissal - - - - -	-	-	-	-	-	-	-
Disrating - - - - -	1	-	-	§1	-	-	2
Forfeiture of pay, prize money, &c. - - -	-	-	-	-	-	-	-
Severely reprimanded - - - - -	-	-	-	-	-	-	-
TOTAL Number of Punishments - - -	63	31	2	112	29	1	238
Pardoned - - - - -	-	-	-	-	-	-	-

\* Penal servitude.—One marine at home, sentence modified to imprisonment, with dismissal. Two seamen abroad, sentences modified to imprisonment, with hard labour.

† Imprisonment, with dismissal.—In sentences of two seamen at home and five seamen abroad, dismissal remitted.

‡ Corporal punishment and imprisonment.—In sentence of a marine at home, corporal punishment remitted.

§ Disrating.—One acting engine-room artificer abroad, sentence of reduction to rating of stoker annulled, not being legal.



SEAMEN OF THE ROYAL NAVY—*continued.*

Part IV.—RETURN of the Number of Men tried by COURT MARTIAL, compared with the Number of Trials during 1875.

	NUMBER OF MEN TRIED.				Number of Trials.
	Once.	Twice.	Three Times.	TOTAL.	
Petty Officers and Seamen - -	178	- -	- -	178	158
Marines Afloat - - - -	63	- -	- -	63	58
Boys - - - - -	3	- -	- -	3	2
GENERAL TOTAL - - -	244	- -	- -	244	218

RETURN of the Number of SUMMARY PUNISHMENTS during the Year 1875.

	AT HOME.			ABROAD.		
	Petty Officers and Seamen.	Marines.	Boys.	Petty Officers and Seamen.	Marines.	Boys.
Discharged with disgrace - - -	- - -	- - -	1	—	—	—
Discharged as objectionable -	17	- - -	7	4	—	—
Corporal punishment with cat	1	- - -	-	5	1	—
Corporal punishment with birch or cane.	- - -	- - -	341	- - -	- - -	111
Imprisonment - - - -	651	220	24	444	85	3
Disrating - - - - -	103	16	-	260	10	—
Cells - - - - -	1,100	461	19	964	247	13
Minor punishments - - -	15,946	5,376	4,005	25,558	5,534	1,883
TOTAL - - -	17,818	6,073	4,397	27,235	5,877	2,010

AT HOME - - - - - 28,288

ABROAD - - - - - 35,122

GRAND TOTAL - - - 63,410

## ROYAL MARINES.

RETURN of the Number of COURTS MARTIAL held during 1875, showing the OFFENCES for which the Men were Tried, the SENTENCES Awarded, and the PUNISHMENTS Inflicted on Men of the ROYAL MARINES, serving at Head Quarters and with the Battalion in *Japan*.

## PART I.—COURTS MARTIAL AND OFFENCES.

	Royal Marine Artillery.	Chatham.	Portsmouth.	Plymouth.	Recruit Depôt, Walmer.	GENERAL TOTAL.
Number of Courts Martial - -	232	115	138	46	125	656
Mutiny - - - - -	-	-	-	-	-	-
Desertion - - - - -	35	19	17	4	24	99
Violence to superiors and insubordination.	19	20	9	4	10	62
Disobedience - - - - -	8	1	1	1	4	15
Quitting or sleeping on post - -	-	-	2	-	-	2
Drunk on duty under arms - -	18	11	12	5	2	48
Drunkenness - - - - -	17	14	14	7	13	65
Disgraceful conduct - - - -	2	4	5	6	5	22
Absence without leave - - - -	120	55	62	21	39	297
Making away with necessaries - -	95	33	14	19	43	204
Miscellaneous - - - - -	54	18	2	21	44	139
TOTAL of Offences - - -	368	175	138	88	184	953

## PART II.—SENTENCES AWARDED.

	Royal Marine Artillery.	Chatham.	Portsmouth.	Plymouth.	Recruit Depôt, Walmer.	GENERAL TOTAL.
Death - - - - -	-	-	-	-	-	-
Penal servitude - - - - -	-	-	-	1	-	1
Reduction to the ranks - - - -	2	4	-	1	3	10
Reduction to the ranks and imprisonment.	1	-	-	1	-	2
Corporal punishment - - - -	-	-	-	-	-	-
Corporal punishment and imprisonment.	-	-	-	-	-	-
To be put under stoppages without other punishment.	-	2	-	-	-	2
Solitary confinement - - - -	-	-	-	-	-	-
Solitary confinement and imprisonment with or without hard labour.	11	-	2	-	1	14
Imprisonment with or without hard labour.	218	109	135	43	121	626
TOTAL of Sentences - - -	232	115	137	46	125	655
Acquitted - - - - -	1	-	1	-	-	2

ROYAL MARINES—*continued.*

## PART III.—PUNISHMENTS INFLICTED.

	Royal Marine Artillery.	Chatham.	Ports- mouth.	Plymouth.	Recruit Depôt, Walmer.	GENERAL TOTAL.
Death - - - - -	-	-	-	-	-	-
Penal servitude - - - -	-	-	-	-	-	-
Reduction to the ranks - -	2	4	-	2	-	8
Reduction to the ranks and imprison- ment.	1	-	-	-	-	1
Corporal punishment - - -	-	-	-	-	-	-
Corporal punishment and imprison- ment.	-	-	-	-	-	-
To be put under stoppages without other punishment.	-	2	-	-	-	2
Solitary confinement - - -	-	-	-	-	-	-
Solitary confinement and imprison- ment with or without hard labour.	11	-	2	-	1	14
Imprisonment with or without hard labour.	218	109	135	44	121	627
TOTAL of Punishments - - -	232	115	137	46	122	652
Pardoned - - - - -	-	-	-	-	3	3

PART IV.—RETURN of the Number of Men Fined for DRUNKENNESS, serving at Headquarters, and with the Battalion in *Japan*, during the Year 1875.

DIVISION.	NUMBER OF MEN FINED.													Number of Cases of Fines Inflicted.	
	Once.	Twice.	Three Times.	Four Times.	Five Times.	Six Times.	Seven Times.	Eight Times.	Nine Times.	Ten Times.	Eleven Times.	Twelve Times.	Thirteen Times.		TOTAL of Men Fined.
Royal Marine Artillery - - -	71	17	15	10	2	2	-	-	-	-	-	-	-	117	212
Chatham - - - - -	81	27	22	12	5	1	-	-	-	-	-	-	-	148	280
Portsmouth - - - - -	81	24	14	3	-	-	-	-	-	-	-	-	-	122	183
Plymouth - - - - -	67	14	8	2	-	-	-	-	-	-	-	-	-	91	127
Recruit Depôt, Walmer - - -	81	37	22	12	5	5	1	1	-	-	-	-	-	164	339
GENERAL TOTAL - - - - -	381	119	81	39	12	8	1	1	-	-	-	-	-	642	1,141

PART V.—RETURN of the Number of MINOR PUNISHMENTS, including FINES for DRUNKENNESS, inflicted by order of Commanding Officers, on ROYAL MARINES serving at Headquarters, and with the Battalion in *Japan*, during the Year 1875.

DIVISION.	NUMBERS.
Royal Marine Artillery - - -	1,469
Chatham - - - - -	1,175
Portsmouth - - - - -	1,567
Plymouth - - - - -	1,080
Recruit Depôt, Walmer - - -	1,187
TOTAL - - - - -	6,478

Royal Marine Office, }  
24 March 1877. }

G. B. Rodney,  
Deputy Adjutant General.

## NAVY (CRIME AND PUNISHMENT).

RETURNS of the Number of Courts MARTIAL held upon SEAMEN of the ROYAL NAVY during the Year 1875; the OFFENCES for which the Men were Tried; the SENTENCES Awarded; and the PUNISHMENTS Inflicted at Home and Abroad; of the Number of SUMMARY PUNISHMENTS Inflicted; and, similar RETURNS relating to the ROYAL MARINES (in continuation of Parliamentary Paper, No. 201, of 1876).

(*Mr. Algernon Egerton.*)

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*Ordered, by The House of Commons, to be Printed,  
6 April 1877.*

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CORRESPONDENCE

IN REGARD TO

HER MAJESTY'S SHIPS VISITING GROUPS OF  
UNINHABITED ISLANDS

LYING ON

THE TRACKS OF VESSELS BETWEEN GREAT BRITAIN  
AND THE AUSTRALASIAN COLONIES.

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Presented to both Houses of Parliament by Command of Her Majesty.  
May 1877.

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LONDON:

PRINTED BY GEORGE EDWARD EYRE AND WILLIAM SPOTTISWOODE,  
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.

FOR HER MAJESTY'S STATIONERY OFFICE.

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## CORRESPONDENCE.

No. 1.

GOVERNOR SIR G. F. BOWEN, G.C.M.G., to the EARL OF CARNARVON.  
(Received May 6, 1876.)

My LORD, Government House, Melbourne,  
March 7, 1876.

At the request of my Responsible Advisers I have the honour to forward, and to recommend to the favourable consideration of your Lordship, and of the Lords Commissioners of the Admiralty, the enclosed ministerial memorandum by Sir James McCulloch.

2. It will be seen that the object of this memorandum is to urge the importance of issuing instructions that "Her Majesty's ships shall visit, whenever practicable, the groups of uninhabited or unfrequented islands which lie, more or less, on the outward and homeward tracks of vessels trading between Great Britain and the Australasian Colonies, in order that relief may be afforded to shipwrecked persons, should such be found thereon."

3. Sir James McCulloch further observes, that the recent "discovery of a number of persons, saved from the missing ship 'Strathmore,' on the Crozets (in the Southern Indian Ocean), after six month's privation and suffering, coupled with the fact that at least one other passenger vessel for Australia is now given up as lost, has invested this subject with fresh and painful interest."

I have, &c.

The Right Hon. the Earl of Carnarvon, (Signed) G. F. BOWEN.  
&c. &c. &c.

Enclosure in No. 1.

MEMORANDUM for HIS EXCELLENCY THE GOVERNOR.

(No. 566.)

SIR James McCulloch has the honour to submit to his Excellency the Governor that it is advisable to communicate at the earliest opportunity with the Right Honourable the Secretary of State for the Colonies, with a view to the issue of instructions to officers commanding Her Majesty's ships to visit, whenever practicable, the groups of uninhabited or unfrequented islands which lie, more or less, in the outward and homeward tracks of vessels trading between Great Britain and the Australasian Colonies, in order that relief may be afforded to shipwrecked persons, should such be found thereon.

His Excellency will probably recollect that in 1868, after the rescue of the survivors in the case of the "General Grant," which vessel was wrecked long previously on the Auckland Islands, the Lords Commissioners of the Admiralty were good enough to say, in reply to a letter from the Melbourne Chamber of Commerce, that periodical visits should in future be made by the ships on the Australian Station to the islands in the neighbourhood of New Zealand. Whether the directions then given continue to be observed this Government is not aware. In any case, no reference was made at that time to the islands situated between the Cape of Good Hope and Australia, which late events have shown to demand equal attention.

Recent telegraphic intelligence of the discovery of a number of persons, saved from the missing ship "Strathmore," on the "Crozets," after six months' privation and suffering, coupled with the fact that at least one other passenger vessel for Australia is now given up as lost, has invested the subject with fresh and painful interest. Had it been the practice of Her Majesty's ships to examine the "Crozets" and other islands in the



Southern Indian Ocean when navigating those waters, it is more than probable that the unfortunate persons alluded to would have been relieved from their distressing position at a much earlier date, and possibly many lives would have been saved.

Sir James McCulloch, therefore, begs to request that his Excellency will be so good as to write to Lord Carnarvon on the subject by the outgoing mail. He feels persuaded that it has only to be brought under the notice of Her Majesty's Government to ensure immediate attention. It is suggested that ships of war should receive orders to make a careful examination of the various islands when sailing in adjacent seas; and that the officers commanding at the nearest naval stations shall cause like examinations to be made by the ships at their disposal as frequently as the exigencies of the service will permit.

JAMES McCULLOCH.

Melbourne, March 3, 1876.

No. 2.

COLONIAL OFFICE to ADMIRALTY.

SIR,

Downing Street, May 15, 1876.

I AM directed by the Earl of Carnarvon to transmit to you, for the consideration of the Lords Commissioners of the Admiralty, a copy of a Despatch from the Governor of Victoria,\* with a ministerial memorandum, urging the importance of issuing instructions to the officers in command of Her Majesty's ships to visit, whenever practicable, the groups of uninhabited or unfrequented islands lying more or less on the outward and homeward tracks of vessels trading between Great Britain and the Australasian Colonies.

The Secretary to the Admiralty.

I am, &c.  
(Signed) R. H. MEADE.

No. 3.

ADMIRALTY to COLONIAL OFFICE.

SIR,

Admiralty, May 18, 1876.

WITH reference to your letter of the 15th instant,† and the Despatch of the Governor of Victoria, in regard to the importance of Her Majesty's ships visiting, whenever practicable, the groups of uninhabited or unfrequented islands lying, more or less, on the outward and homeward tracks of vessels trading between Great Britain and the Australian Colonies, I am commanded by my Lords Commissioners of the Admiralty to request you will state to the Earl of Carnarvon that their Lordships have already been in communication with the Committee of Lloyd's on this question.

2. I am also to forward, for his Lordship's information, a copy of a letter addressed to the Secretary at Lloyd's on the 10th instant, stating the views of this Board on this subject.

The Under Secretary of State for the Colonies,  
&c. &c. &c.

I am, &c.  
(Signed) ROBERT HALL.

SIR

Admiralty, May 10, 1876.

WITH reference to your letter of the 3rd instant, drawing attention to the fact that three first class ships, trading between Great Britain and Australia within the last nine months, are unaccounted for, and requesting that one of Her Majesty's ships should visit from time to time the islands lying in the ordinary track of vessels making the Australian voyage, or that one of the Australian squadron should be despatched on that service, I am commanded by my Lords Commissioners of the Admiralty to acquaint you, for information of the committee for managing the affairs at Lloyd's, that with every wish to meet their request, my Lords are unable to give directions for one of Her Majesty's ships on the Australian Station to search the outlying islands, as they are quite beyond the limits of the Australian command.

2. Orders, however, will be given for any vessel proceeding from the Cape of Good Hope to Australia, when possible, to sight the Crozet Islands sufficiently near to examine them.

\* No. 1.

† No. 2.



3. In making this communication my Lords desire me to observe that it has come to their knowledge that ships, in making the passage from this country to Australia, appear to incur very great risk by going too far south, and making the run amongst icebergs and floating ice, and that if this is the general practice their Lordships cannot feel surprised at several vessels being now missing.

4. My Lords further desire me to call attention to the first page of the sixth edition of the "Australia Directory," Vol. I., which directs that, "after rounding the Cape of Good Hope, vessels bound to the south coast of Australia should run down their longitude on or about the parallel of 39° S., where the winds blow almost constantly from some western point, and seldom with more strength than will admit of carrying sail. In a higher latitude the weather is frequently more boisterous and stormy, and sudden changes of wind, with squally wet weather, are almost constantly to be expected, especially in the winter season, and after passing the islands of St. Paul and Amsterdam. Islands of ice have also been encountered in those regions, as was almost fatally proved by Her Majesty's ship 'Guardian' striking against one in latitude 46° or 47° S., and nearly foundering in the beginning of summer."

I am also to draw your attention to the foot note on page 1 of the same work indicated by an asterisk.

5. As an illustration of the above remarks, a chart of the southern hemisphere is herewith transmitted, showing the late tracks of the steamship "St. Blyth."\*

I am, &c.

The Secretary at Lloyd's.

(Signed) ROBERT HALL.

#### No. 4.

The EARL OF CARNARVON to GOVERNOR SIR G. F. BOWEN, G.C.M.G.

SIR,

Downing Street, May 30, 1876.

I CAUSED to be forwarded, for the consideration of the Lords Commissioners of the Admiralty, a copy of your Despatch of the 7th of March,† with the ministerial memorandum which accompanied it, pointing out the desirability of occasional visits on the part of Her Majesty's ships to the groups of uninhabited or unfrequented islands lying more or less in the outward and homeward tracks of vessels trading between Great Britain and the Australian Colonies; and I have the honour to transmit to you, for your information, a copy of a letter, with its enclosures, which has been received from their Lordship's Department in reply.‡

I have, &c.

Governor Sir G. F. Bowen, G.C.M.G.

(Signed) CARNARVON.

#### No. 5.

The MARQUIS OF NORMANBY to the EARL OF CARNARVON.

(Received January 31, 1877.)

MY LORD,

Wellington, December 12, 1876.

I HAVE the honour to bring under your Lordship's notice a "Memorandum" which has been handed to me by my Government, in which they express their hope that Her Majesty's Government may be induced to establish a dépôt of food and clothing on the "Crozet Islands," for the use of any persons who may unfortunately be wrecked there.

2. The recent loss of the "Strathmore," together with the fearful sufferings experienced by the crew and passengers who succeeded in reaching the shore, has naturally attracted much attention to these islands, which, from their position in the direct course of ships trading to New Zealand and Australia, are a constant source of danger to vessels employed in that trade; and in view of the largely increased and still increasing trade between England and these Colonies, it would seem desirable, now that attention has so unfortunately been drawn to the subject, to take some steps which would at any rate alleviate the sufferings of any persons who may in future unfortunately be wrecked upon them.

3. The cost of establishing such a dépôt as that proposed could not be large, while it may be the means of saving many valuable lives.

I have, &c.

The Right Hon. the Earl of Carnarvon,

(Signed) NORMANBY.

&c. &c. &c.

\* Printed in H.C. No. 289 of 1876.

† No. 1.

‡ No. 2.

Enclosure in No. 5.

## MEMORANDUM FOR HIS EXCELLENCY.

THE Chamber of Commerce at Christchurch recently drew attention to the privations and sufferings of the survivors from the wreck of the "Strathmore" on the Crozet Islands, and suggested that the Home authorities should be urged to place thereon a supply of food and clothing for the relief of castaways.

As these dangerous islets lie in the track of vessels making the voyage from Europe to Australia and New Zealand, there can be no question as to the desirability of taking the precaution to prevent any persons who may hereafter be unfortunately cast ashore there from encountering sufferings such as those to which the survivors from the "Strathmore" were exposed. The Government, therefore, beg that his Excellency will represent this matter for the favourable consideration of the Home Government.

It appears from correspondence between the Lords of the Admiralty and the Committee of Lloyd's, with respect to Her Majesty's ships calling at the islands between the Cape of Good Hope and Australia, for the purpose of rescuing persons who may be shipwrecked upon any of them (a copy of which correspondence was laid before the House of Commons, and printed), that my Lords decided to give orders that Her Majesty's ships proceeding from the Cape of Good Hope to Australia shall, in future, when possible, pass the Crozets sufficiently near to examine them.

The Government venture to express a hope that, on the representations made herein being conveyed to the Lords of the Admiralty, they will see fit to supplement the instructions they have already given, by directing that a supply of food and clothing shall be landed on the islands, as promptly as possible, from one of Her Majesty's ships; and that whenever the group is subsequently visited, the depôt shall be inspected, and the supply renewed as far as may be necessary.

Wellington, November 11, 1876.

(Signed) H. A. ATKINSON.

## No. 6.

## COLONIAL OFFICE to the ADMIRALTY.

SIR,

Downing Street, February 21, 1877.

WITH reference to the letter from this Department of the 15th of May last, and to the reply from the Admiralty of the 18th of the same month,\* in regard to the importance of Her Majesty's ships visiting, whenever practicable, the groups of uninhabited or unfrequented islands lying more or less in the track of vessels trading between this country and the Australasian Colonies, I am directed by the Earl of Carnarvon to transmit to you, to be laid before the Lords Commissioners of the Admiralty, a copy of a Despatch from the Governor of New Zealand,† enclosing a memorandum from his Government expressing their hope that the Lords Commissioners will supplement the instructions they have already given upon this subject, by directing that a depôt of food and clothing be established on the Crozet Islands for the use of any persons who may unfortunately be wrecked there.

Lord Carnarvon desires me to add an expression of his own strong hope that it will be in the power of their Lordships to comply with the suggestion made by the New Zealand Government.

I am, &amp;c.

The Secretary of the Admiralty.

(Signed) W. R. MALCOLM.

## No. 7.

## ADMIRALTY to COLONIAL OFFICE.

SIR,

Admiralty, March 10, 1877.

WITH reference to your letter of the 21st February last,‡ and its enclosures relative to the establishment of a depôt of food and clothing in the Crozet Islands for the use of any persons who may be shipwrecked there, I am commanded by my Lords Commissioners of the Admiralty to acquaint you, for the information of the Earl of Carnarvon, that great difficulties exist in the way of placing depôts on these islands, as they are all "iron-bound," and, as a rule, inaccessible. Landing anywhere, even under favourable

\* No. 3.

† No. 5.

‡ No. 6.



auspices, is precarious. The weather, as a rule, is extremely boisterous, accompanied with fogs, and there is only one known anchorage in the whole group, and this is a small and open one on the leewardmost island.

2. The group consists of five islands or clusters of islets, the largest of which is about 13 miles in length and seven in breadth, and they occupy an area included in 35 miles of latitude and two degrees of longitude.

3. My Lords desire me here to observe that the "Strathmore" was lost on the northernmost of the group, which appears to be the smallest cluster, so that depôts on any other of the islands would in the case of that ship have been wholly useless. To place depôts on each of the islands would, therefore, appear to be the only solution of the proposal recommended, and to do this would involve much risk and a great outlay of time.

4. Their Lordships further consider that it would be very undesirable to carry out the suggestions made in the communications before referred to, as ships can have no possible excuse for nearing the Crozets when making a passage to Australia or New Zealand; and if depôts were provided there it would be tantamount to offering a premium for them to navigate in the neighbourhood. There is abundance of ocean room to the northward of these islands, and, in their Lordships' opinion, it is a dereliction of duty in any captain going near them, considering the fogs and tempestuous weather that prevail in their neighbourhood; and, further, that in the lower latitude of 40° S., or thereabouts, finer and more favourable winds are found.

5. In conclusion, my Lords would remark that in all the discussion which has been brought about by the lamentable affair of the "Strathmore," the fact that this ship was more than 80 miles out of her reckoning at the time of the wreck appears to have been entirely lost sight of.

I am, &c.

The Under Secretary of State,  
Colonial Office.

(Signed) ROBERT HALL.

#### No. 8.

The EARL OF CARNARVON to the MARQUIS OF NORMANBY.

MY LORD, Downing Street, March 17, 1877.

I HAVE received your Despatch of the 12th of December,\* enclosing a memorandum from your Ministers expressing their hope that the Lords Commissioners of the Admiralty will, in addition to the orders they have already given, that any of Her Majesty's ships proceeding from the Cape of Good Hope to Australia shall, when possible, sight the Crozet Islands sufficiently near to examine them, issue further instructions that a depôt of food and clothing shall be established on the islands for the use of any persons who may unfortunately be wrecked there.

2. I have been in communication with the Lords Commissioners of the Admiralty upon the subject, and I enclose a copy of the reply I have received from their Lordships.†

3. From this letter your Ministers will learn that great difficulties exist in complying with their suggestion, owing to the inaccessible nature of the Crozet Islands; and, moreover, that depôts would have to be established on each of the islands, owing to the scattered nature of the group, in order to ensure that persons shipwrecked there would be able to avail themselves of them.

4. But, in addition to these difficulties, their Lordships again point out, as they did in their letter to the Secretary of Lloyd's, dated the 10th of May 1876,‡ to which your Ministers refer, that the Crozet Islands do not lie in the proper track of vessels trading to Australia and New Zealand, and that great and unjustifiable risks are incurred by those captains who persist in making their course in such high latitudes.

5. The opinions which their Lordships express appear to me to be conclusive, and as it is desirable that their views should be known as widely as possible I propose to lay the correspondence which has passed on the subject before Parliament.

I have, &c.

The Marquis of Normanby.

(Signed) CARNARVON.

\* No. 5. † No. 7. ‡ Vide Enclosure to No. 3.

## No. 9.

## ADMIRALTY to COLONIAL OFFICE.

SIR,

Admiralty, March 19, 1877.

WITH reference to previous correspondence respecting the Crozet Islands, I am commanded by my Lords Commissioners of the Admiralty to send you herewith, for the perusal of the Earl of Carnarvon, a letter, dated the 4th January last, from Captain Lindesay Brine, of Her Majesty's ship "Wolverene," reporting his visit to these islands in the South Indian Ocean.

I am, &amp;c.

The Under Secretary of  
State for the Colonies.

(Signed) ROBERT HALL.

## Enclosure in No. 9.

## REPORT respecting the CROZET ISLANDS, South Indian Ocean.

H.M.S. *Wolverene*, at Sea, Lat.  $37^{\circ} 9'$  South, Long.  $150^{\circ} 57'$  E.

SIR,

4th January 1877.

I HAVE the honour to submit to you for the information of the Lords Commissioners of the Admiralty the following report of an examination of the Crozet Islands, made in accordance with the directions of their Lordships, to ascertain if there was any appearance of castaways or vessels which may have wrecked there.

2. We left Simons Bay on 18th November, and proceeded to the south until we fell in with the prevailing westerly winds in latitude  $38^{\circ}$  south, longitude  $18^{\circ}$  east. We then steered straight for the Crozet Islands until we reached latitude  $43^{\circ} 26'$  south, longitude  $36^{\circ} 10'$  east, the islands then being 622 miles distant. We now entered a dense fog which continued with rare intervals of open sky until the morning of the 30th, at which time we had nearly run our estimated distance.

3. We were on the point of heaving to, to wait for the weather to clear, when a sudden lift of mist disclosed for a few minutes the west end of the Twelve Apostles about three miles off on the bow.

4. This point of the island is remarkable for its lofty group of pinnacle rocks closely resembling the Needles. These, although attached by their base to the island, appeared when first seen like sharp jagged peaks arising separately from the sea, and it was the low morning light penetrating between the open spaces that cause them to stand out so clearly, the island itself was not visible. A high rolling sea broke heavily on the weather shore.

5. At about 9 of the forenoon the fog again lifted, and I steamed in for the land to examine the Twelve Apostles (the island on which the *Strathmore* was wrecked), firing guns to attract attention.

6. It was evident that no close observation could be made unless a change took place in the weather, but most fortunately the fog cleared away and was succeeded by two singularly fine and calm days, and we were thus able to examine the shores, bays, and hill slopes within a distance from which any people or signs of wreck could have been distinctly seen.

7. A small cairn, raised by the survivors from the "*Strathmore*," still exists at a point on the ridge about 300 feet above the sea. A grassy plateau where they were encamped was covered with white albatrosses sitting on their nests, and the rocks were crowded with penguins. Seabirds of various kinds were numerous, attracted by a good stream of fresh water which flows from the hill over the cliff into the sea.

8. After completing the examination of the Twelve Apostles, I steamed across to Hog Island and examined its leeward coast. Here, as at the Twelve Apostles, the valleys and hill sides were dotted with white albatrosses.

The top of this island was covered with snow, and, although it was now the summer of these latitudes, large quantities of snow were still lying in the cleft of the rocks near the shore. The windward or west side of Hog Island is precipitous and much exposed, and I did not see any places where wrecked people could settle, but upon its lee or eastern slope there were several fairly sheltered positions, where the landing would not be difficult. The lower sides of the hills are covered with coarse grass. There are numerous birds and rabbits and several fresh water streams.

9. I now proceeded to Penguin Island, the southern extremity of the Crozet Group. This is a bare precipitous rock about  $4\frac{1}{2}$  miles in circumference. I could not see any water here, and very few birds.

This volcanic island appears to be destitute of any means of preserving life, and unfortunately it is, from its position, the most dangerous for vessels proceeding by a great circle route to Australia.

10. The search round the shores of the Windward Islands occupied one day, and the next was employed in a similar manner examining the Eastern Islands.



11. The first visited was Possession Island, the largest and most important of the group. When off Nairne Bay we observed on the beach a hut, several casks, and two boats, one of which seemed to be in fair condition. The sea being smooth and the wind light, I decided to anchor and send in our boats to search the shore, as I thought it probable we should find some record left by people who might have gone there in the hope of meeting a sealing vessel.

12. Upon landing, our interest was immediately excited by the strange sensation of finding ourselves surrounded by animals which evidently had not the slightest fear of men or their guns. Hundreds of seals which were resting on the damp grass bordering on the stream, which at this point enters the sea, made no attempt to escape from us; the albatrosses also would not move from their nests on the ground. These magnificent birds, measuring in several instances 11 feet across the wings, only showed resistance when actually seized, and even then did not seem to have any sense of danger. The bay was alive with birds; we observed the white and sooty albatross, petrels of various kinds, black hens and cape pigeons, numerous gulls, and a few wild ducks, and the rocks were covered with seals and penguins.

13. The hut was about 12 feet long, and contained six sleeping bunks; it was rudely constructed with staves of casks. There was a stove inside on the right of the door ingeniously made out of an old fish kettle; the funnel was formed by a series of small iron hoops nailed together. There were a number of empty casks outside together with other débris belonging to a sealing establishment. There were two whale boats hauled up on the beach; one of these was useless, the other with some slight repairs could be made seaworthy. The name J. A. Brink was cut on the door of the hut. We found no document, or any signs of the bay having been lately visited. The following record was placed in a tin box and secured to the stove in the hut: Her Britannic Majesty's ship "Wolverene," 17 guns, visited each island of the Crozet group to ascertain if there were any shipwrecked people on them, and finally called at this bay on the 1st December 1876 on her way to Perth, Western Australia, from England.

14. We concluded our examination by steaming round and searching the steep and desolate shores of East Island, the last of the group.

15. Soon after leaving the land and while the Crozets were still visible, we passed close to a large iceberg whose height was estimated at 300 feet, and the circumference at the water line about three miles.

16. Judging from my experience, I would submit that merchants vessels should be cautioned against going down to a higher latitude than the 44th parallel; in the stormy latitudes south of this the westerly gales propel a ship through the water at a great speed, and the seas are so high that it would be difficult to check the speed or haul to the wind to clear danger. The Crozets are in a known position and can be avoided by careful navigation, but this is not the case with icebergs; if one of these should happen to be floating in the line of course of a vessel going through the water at a rate of 12 or 13 knots during a fog by day or on a dark night it would not be seen until it was too near to be avoided and destruction would be certain. Icebergs in these southern seas should be considered as representing rocks or shoals in unknown positions. Merchant ships rushing blindly through these dangers run most criminal risks, they play a daring game of chance at which the lives of the passengers and crews are hazarded. It is more than probable that the majority of the ships reported as missing in these seas are missing because wrecked by sudden and violent contact with drifting icebergs.

17. In the event of people being cast away on the Crozets I would recommend that, if possible, they should establish a look out place on the Twelve Apostles; this island is the one which would most probably be sighted by ships, and an object placed or a man standing on the ridge where the "Strathmore" cairn is erected would be seen at a great distance.

The north-east point of the Twelve Apostles is by the chart placed in longitude  $50^{\circ} 41'$  east. Our chronometers placed the point in longitude  $50^{\circ} 36'$  east. This is assuming the latitude to be correct, as no observations for latitude could be obtained. If our longitude is correct the Twelve Apostles should therefore be placed five miles west of their present position on the chart.

18. Attached to this letter is a copy of the log for the two days that the "Wolverene" was examining the Crozet group.

I have, &c.  
(Signed) LINDESAY BRINE,  
Captain.

H.M.S. "WOLVERENE," Thursday, 30th day of November 1876, from Cape of Good Hope to Crozet Isles, and among the Crozets.

Initials of the Officers of the Watch.	Hours.	Knots.	Tenths.	Standard Compass Courses.	Lee-way Points.	Wind.		Weather.	Deviation of Standard Compass.	Height of		Temperature of the Sea.	REMARKS.
						Direction.	Force.			Bar.	Ther.		
													A.M.
													Steam up in three boilers.
													3.10 Squared yards, shaped Co. S.E. $\frac{1}{2}$ E.
	1	1	—	N. $\frac{1}{2}$ E. —	5 $\frac{1}{2}$	—	—	c.q. —	—	—	—	—	Out, reefs set; Foresail and T.G. sail.
	2	1	—	—	—	N.W. by W.	4 to 5	—	—	—	—	—	4.50 Crossed royal yards; set the sail and Port F. Top Studd sail.
	3	1	—	—	—	—	—	—	—	—	—	—	5.45 Commenced steaming 40 Rev. Lost overboard by accident. Log lines one in No.
	4	4	—	—	—	—	—	o.d. —	—	29.23	40	39	7.5 Sighted Twelve Apostles Islands on S. Bow. In Studd. sail. Upper sails and Up. Foresail.
	5	6	—	—	—	—	—	—	—	—	—	—	9.30 Set fore and aft sails.
	6	8	—	—	—	—	—	—	—	—	—	—	9.40 Mustered at quarters, prayers. In fore and aft sails stopped. Dense fog.
	7	9	5	—	—	—	—	—	—	—	—	—	10.10 Proceeded under steam and rounded N. end of Twelve Apostles group, steamed close under lee, fired guns to attract attention. Proceeded full speed for Hog Island. 11 Stopped under lee of Hog Island, fired guns, sounded in 57 fms., cinders and black sand. Proceeded.
	8	—	—	Steaming as	—	N.W.	3 to 4	o.m. —	—	29.23	41	40	
	9	—	—	requisite around	—	—	—	—	—	—	—	—	
	10	—	—	12 Apostles	—	—	—	—	—	—	—	—	
	11	—	—	Group and Hog Island.	—	—	—	—	—	—	—	—	
Noon.	—	—	—	—	—	Westerly.	2 to 4	b.c.m. —	—	29.37	40	39	

Course.	Distance		Latitude.	Longitude.	Variation allowed.	Water remaining. 29 $\frac{1}{2}$ tons.	Daily Expenditure. 3 $\frac{1}{2}$ tons.	Distilled since yesterday.	True Bearing and Distance.	No. on Sick List.
	made good.	through the water.	D. R.	D. R.						
Current.	Miles.	Miles.	Obs.	Chro.						26

													P.M.
	1	—	—	—	—	—	—	—	—	—	—	—	0.10 Braced round yards, steaming round West end of Hog Island and for Penguin Isles.
	2	—	—	—	—	Fog	—	—	—	—	—	—	2.0 Sighted Penguin Island ahead. Set fore and aft sails.
	3	—	—	—	—	0	—	—	—	—	—	—	3.30 Fired a gun. Easy speed around Penguin Isle; found only one island instead of the two marked on the chart.
	4	—	—	—	—	S.S.W.	—	b.c.	—	29.38	40	39	5.30 Mustered at quarters. Set topsails; sighted Possession Island on P. bow; stopped. Steaming; went on condensing.
	5	—	—	—	—	0	—	b.c.	—	29.37	36	38	8.15 Sounded in 120 fms.; fine black and grey sand.
	6	—	—	—	—	—	—	b.c.	—	29.40	38	38	9.20 Braced round. In trysail.
	7	1	0	S.E.	—	2	—	—	—	—	—	—	Mid. Penguin Island N.W. by N. $\frac{1}{2}$ N.
	8	0	5	—	—	Calm	—	b.c.	—	—	—	—	
	9	—	—	—	—	2	—	—	—	—	—	—	
	10	1	0	—	—	Lt. Airs	—	—	—	—	—	—	
	11	—	—	As requisite for Possession Island.	—	—	—	—	—	—	—	—	
Midt.	0	5	—	—	—	—	—	—	—	29.40	38	39	

Signals, &c. {

Coals expended during the 24 hours. { For Engines 20 Tons. Cwt.  
For Ship 23 21  
For Distilling 23 23

## H.M.S. "WOLVERENE," Friday, 1st day of December 1876, in and out the Crozet group.

Initials of the Officer of the Watch.	Hours.	Knots.	Tenths.	Standard Compass Courses.	Leeway Points.	Wind.		Weather.	Deviation of Standard Compass.	Height of		Temperature of the Sea.	REMARKS.
						Direction.	Force.			Bar.	Ther.		
	1	—	8	S.S.E. - -	—	—	—	—	—	—	—	—	A.M.
	2	1	5	—	—	E. by S. -	1	b.c. -	—	—	—	—	3.35. Proceeded under steam.
	3	1	5	—	—	—	—	—	—	—	—	—	Furled sails.
	4	2	5	S.S.E. - -	—	—	—	—	—	—	—	—	4.0 Fog and drifting mist.
	5	6	5	S.E. by E. as	—	E.S.E. -	2	o.c.m. -	—	29.48	37	39	6.30 Obs. Possession Island on Port
	6	6	5	requisite for	—	—	3 to 4	—	—	—	—	—	Bow.
	7	6	8	Possession	—	—	—	—	—	—	—	—	↑
	8	6	—	Island.	—	—	—	—	—	29.38	38	38	9.0 Division; Prayers.
	9	—	—	Steaming as	—	—	—	—	—	—	—	—	Steaming along the S.W. & south
	10	—	—	requisite and	—	—	—	—	—	—	—	—	side of island, firing guns at
	11	—	—	examining the	—	—	—	—	—	—	—	—	intervals.
	11	—	—	bays in Posses-	—	E. - -	1	—	—	—	—	—	9.10 Sighted East Island on S. Bow.
	Noon.	—	—	sion Isle.	—	—	—	—	—	29.39	39	38	11.0 Off Navire Bay; weather fine.
													Steamed closer in and came to
													in 17 fms. with S.B. veered to
													30 schls.
													Kept steam ready.
													Sent Lieut. Dugdale in cutter to
													deposit a memorandum and
													examine hut and bay.
													Noon.

Course.	Distance		Latitude.	Longitude.	Variation allowed.	Water remaining.	True Bearing and Distance.	No. on Sick List.
	made good.	through the water.						
Current.	Miles.	Miles.	D. R.	D. R.	Daily Expenditure.	Distilled since yesterday.		
			Obs.	Chro.				28

	1	—	—	Single anchor off Navire Bay. Steaming for East Island. Examined the bays and creeks around East Island.	—	—	—	—	—	—	—	—	P.M.
	2	—	—		—	S.E. -	1	o.c. -	—	—	—	—	0.30 Officers landed.
	3	—	—		—	—	—	—	—	—	—	—	2.40 Boats returned, seeing severa
	4	—	—		—	—	—	o.m. -	—	29.40	40	—	seals on the beach.
	5	—	—	—	—	—	—	—	—	—	—	—	2.45 Weighed, and proceeded under
	6	—	—	—	—	—	—	—	—	—	—	—	steam for East Island.
	7	—	—	—	—	—	—	—	—	—	—	—	4.0 Off west of do., steaming along
	8	3	—	East	—	—	—	—	—	—	—	—	the land to the eastward and
	9	6	5	—	—	—	—	—	—	—	—	—	northward. Firing guns at
	10	3	5	—	—	—	—	—	—	—	—	—	intervals.
	11	2	—	N.E.	—	—	—	—	—	—	—	—	4.0 Quarters.
	Midt.	1	—	N.E. by N. -	—	E.S.E. -	Light Airs.	o.c. -	—	29.62	39	38	7.10 Having examined all the islands,
													and this being the last, shaped
													course east on our way to
													Australia.
													7.25 Sighted a large iceberg on P. bow
													and two smaller pieces on S.
													bow.
													9.35 Stopped steaming.
													9.40 Made plain sail and braced up
													on S. tack.
													Midnight.

Signals, &amp;c. {

Coals expended during the 24 hours.	{ For Engines For Ship For Distilling	Tons. " "	Cwt. " "
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LONDON:

Printed by GEORGE E. EYRE and WILLIAM SPOTTISWOODE,  
Printers to the Queen's most Excellent Majesty.  
For Her Majesty's Stationery Office.



# N A V Y ( E N G I N E E R S ).

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RETURN to an Order of the Honourable The House of Commons,  
dated 14 March 1877;—for,

“STATEMENT showing the Numbers and Estimated Annual Cost of the present Establishment of ENGINEER OFFICERS as compared with the Numbers and Cost of the Permanent Establishment proposed for the future; and TABLE showing the Rates of PAY now received by each Rank of ENGINEER OFFICERS, and the Rates proposed for the future.”

Admiralty, }  
14 March 1877. }

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THOS. WOLLEY,  
Chief Clerk.

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(Mr. Algernon Egerton.)

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*Ordered, by The House of Commons, to be Printed,*  
*14 March 1877.*

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STATEMENT showing the Numbers and Estimated Annual Cost of the present Establishment ENGINEER OFFICERS, as compared with the Numbers and Cost of the permanent Establishment proposed for the future.

RANKS AND RATINGS.	PRESENT ESTABLISHMENT.				PROPOSED ESTABLISHMENT.			
	Full Pay.		Half Pay.		Full Pay.		Half Pay.	
	No.	£.	No.	£.	No.	£.	No.	£.
Chief Inspectors of Machinery - - -	5	2,281	-	-	5	2,920	-	-
Inspectors of Machinery - - -	4	1,825	1	292	4	2,044	3	931
Chief Engineers - - - - -	143	41,010	27	4,435	193	55,343	27	4,965
Engineers and Assistant Engineers -	716	119,528	Harbour Pay.				Harbour Pay.	
			10	985	585	105,426	15	1,587
Chief Engine-room Artificers - -	-	-	-	-	100	12,634	-	-
Engine-room Artificers - - - -	350	34,674	-	-	350	37,020	-	-
TOTAL - - -	1,218	199,318	38	5,712	1,237	215,387	45	7,483
1,256. £. 205,030.					1,282. £. 222,870.			

# RETURN RELATING TO ENGINEERS (NAVY).

3

RETIRE PAY.

FULL PAY.

6.

		As at Present.	As Proposed.	As at Present.	As Proposed.	As at Present.	As Proposed.
		Per diem. £. s. d.	Per diem. £. s. d.	Per diem. £. s. d.	Per diem. £. s. d.	Per diem. £. s. d.	Per diem. £. s. d.
Chief Inspectors of Machinery *		-	-	-	-	-	-
Inspectors of Machinery *		-	-	-	-	-	-
(The three Officers holding the appointments of Inspectors of Machinery in the Reserves to receive 9s. a day more as heretofore.)		-	-	-	-	-	-
Chief Engineers:*		-	-	-	-	-	-
Under 5 years' service (including junior service allowed)		-	-	-	-	-	-
Under 8 "		-	-	-	-	-	-
" 11 "		-	-	-	-	-	-
" 14 "		-	-	-	-	-	-
" 17 "		-	-	-	-	-	-
" 20 "		-	-	-	-	-	-
Above 20 "		-	-	-	-	-	-
And for each additional year of service 1 s. a day more, until the maximum is reached		-	-	-	-	-	-
Engineers:		-	-	-	-	-	-
On promotion		-	-	-	-	-	-
After 3 years' service		-	-	-	-	-	-
" 5 "		-	-	-	-	-	-
" 6 "		-	-	-	-	-	-
Assistant Engineers:		-	-	-	-	-	-
2nd Class		-	-	-	-	-	-
1st Class		-	-	-	-	-	-
Chief Engine-room: { New Rating		-	-	-	-	-	-
Artificers		-	-	-	-	-	-
Engine-room Artificers:		-	-	-	-	-	-
Under 3 years' service		-	-	-	-	-	-
Above 3 "		-	-	-	-	-	-
" 10 "		-	-	-	-	-	-
After Re-engaging for a further Term of 10 Years:		-	-	-	-	-	-
Above 13 years' service		-	-	-	-	-	-
(To be eligible for the rating of Chief Engine-room Artificer on re-engaging for a second period of 10 years)		-	-	-	-	-	-

Maximum to be 500 l. instead of 450 l. as at present.

\* To be allowed to count all confirmed time from the age of 20.

(No Chief Engineer to receive less Retired Pay than he would have been entitled to as Engineer.)

Engineers:

Qualified for Promotion for each Year's Service:  
On Full Pay, | On Harbour Pay,  
£. 7. 10. | £. 3. 15.  
Maximum, £. 150.

Not Qualified for Promotion:  
£. 6. 10. | £. 3. 5.  
Maximum, £. 130.

After Three Years' Service, £. 25, and  
£. 5. | Maximum £. 50.

Under Three Years' Service,  
£. 20 per annum.

To be pensioned on the same scale and under the same regulations as other chief petty officers. Maximum not to exceed 60 l. a year.

## NAVY (ENGINEERS).

STATEMENT showing the Numbers and Estimated Annual Cost of the present Establishment of ENGINEER OFFICERS, as compared with the Numbers and Cost of the Permanent Establishment proposed for the future; and Table showing the Rates of PAY now received by each Rank of ENGINEER OFFICERS, and the Rates proposed for the future.

(*Mr. Algernon Egerton*).

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*Ordered, by The House of Commons, to be Printed,  
14 March 1877.*

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RETURN to an Order of the Honourable The House of Commons,  
dated 7 June 1877;—for,

COPY “of the REGULATIONS issued by the ADMIRALTY in regard to ENGINEER OFFICERS, ENGINEER STUDENTS, and ENGINE ROOM ARTIFICERS, in the ROYAL NAVY.”

Admiralty, }  
7 June 1877. }

THOS. WOLLEY,  
Chief Clerk.

— 1. —

ENGINEER OFFICERS OF THE ROYAL NAVY.

HER MAJESTY, by Her Orders in Council of 30th April 1877, having authorised certain alterations as regards the engineer officers of the Royal Navy to take effect from the 1st of April, my Lords Commissioners of the Admiralty, in pursuance of the above authority, have been pleased to sanction the following changes:—

I.—*As relates to Chief Inspectors of Machinery.*

1. Number to remain as at present, but their full pay to be increased from 1*l.* 5*s.* to 1*l.* 12*s.* a day, their half-pay from 16*s.* to 18*s.* a day, and the maximum of their retired pay to be also increased from 450*l.*, as at present, to 500*l.* a year. All confirmed junior service from the age of 20 to count for retired pay according to the scale given in Her Majesty's Order in Council of 22nd February 1870.

II.—*As relates to Inspectors of Machinery.*

1. Number of inspectors of machinery to be increased from five to seven. Their full pay to be increased from 1*l.* 5*s.* to 1*l.* 8*s.* a day. (The three officers holding the appointments of inspectors of machinery in the reserves to receive as heretofore an additional 3*s.* a day, whether they be chief inspectors, or inspectors of machinery.)

2. Their half-pay to be increased from 16*s.* to 17*s.* a day, and all confirmed junior service from the age of 20 to count for retired pay according to the scale given in Her Majesty's Order in Council of 22nd February 1870.

III.—*As relates to Chief Engineers.*

1. Number to be increased from 170 to 220. Their full pay to be increased according to the following scale:—

Under 5 years' service (including junior service allowed) from 12 <i>s.</i> to 13 <i>s.</i> a day.					
8	“	“	“	“	13 <i>s.</i> „ 14 <i>s.</i> „
11	“	“	“	“	14 <i>s.</i> „ 15 <i>s.</i> „
14	“	“	“	“	15 <i>s.</i> „ 16 <i>s.</i> „
17	“	“	“	“	16 <i>s.</i> „ 17 <i>s.</i> „
20	“	“	“	“	17 <i>s.</i> „ 18 <i>s.</i> „
Above 20	“	“	“	“	18 <i>s.</i> „ 19 <i>s.</i> „

and for each additional year of service 1*s.* a day more until the maximum 1*l.* 2*s.* is reached. Their half-pay to be the same as heretofore, with the exception of officers under five years' service, whose half-pay will be increased from 6*s.* to 6*s.* 6*d.* a day.

2. No chief engineer to receive less retired pay than he would have been entitled to if he had continued to be an engineer up to the date of his retirement.

3. Chief engineers who retire after 30 years' meritorious service on full pay may, at the discretion of the Admiralty, be granted the rank of inspector of machinery.

4. Chief engineers to be allowed to count all confirmed junior service from the age of 20 for retired pay, and for full pay and half-pay according to the scale given in Her Majesty's Order in Council of 22nd February 1870.

IV.—*As relates to Engineers.*

1. Their full pay to be increased, after three years' service as engineer, from 9s. to 10s. a day, and after six years' service as engineer, from 10s. to 11s. a day.
2. The senior engineer in ships with engines of 3,000 indicated horse-power and upwards to have an additional 1s. a day.
3. Their half-pay to be increased by 6d. a day after three years' service.
4. To be retired at the age of 45, or at any age if they have not served for five years, or have been found physically unfit for service. To be granted retired pay on the following scale:—

Engineers qualified for promotion,—

	£.	s.	d.
For each year's service on full pay - - - - -	7	10	-
For each year's service on half-pay - - - - -	3	15	-

Maximum to be £.150.

Engineers not qualified for promotion,—

	£.	s.	d.
For each year's service on full pay - - - - -	6	10	-
For each year's service on half-pay - - - - -	3	5	-

Maximum to be £.130.

5. Time of assistant engineers on probation not covered by commission not to count for retired pay.
6. Engineers with a total of 20 years' service on full pay may, at the discretion of the Admiralty, be granted upon retiring the rank of chief engineer, provided they are qualified for promotion, and have served creditably.

V.—*As relates to Assistant Engineers.*

1. The present ranks of 1st and 2nd class assistant engineers to be merged and styled assistant engineers.
2. After four years' service to be allowed to pass for the rank of engineer, and after five years' service to be eligible for promotion.
3. Their full pay is to be increased after one year's service from 6s. to 7s. 6d. a day.
4. Their half-pay under three years' service to be increased from 3s. 6d. to 4s. a day; over three years' service to be 4s. 6d. a day.
5. To be retired at the age of 40, and at any age if they have not served for five years, or have been found physically unfit for service, and to be granted retired pay on the following scale:—

Under three years' service 20l. a year.

Above three years' service, 25l.; and—

	£.	s.	d.
For each year's additional service on full pay - - - - -	5	-	-
For each year's additional service on half-pay - - - - -	2	10	-

Maximum to be £.50.

6. Time of assistant engineers on probation not covered by commission not to count for retired pay.
7. All additional time granted for 1st and 2nd class certificates gained at the Royal Naval College to count in all respects as service as assistant engineer.
8. The number of engineers and assistant engineers to be reduced so as eventually not to exceed 600, and the reduction to be effected as soon as practicable.
9. That the provisions relating to engineers and assistant engineers in Her Majesty's Order in Council of 22nd February 1870 be cancelled.
10. That in the 16th clause of the Pensions Regulations established by Her Majesty's Order in Council of 12th February 1876, the words "engineers and assistant engineers" be cancelled, and that the whole of Clause 18, with the exception of the last paragraph, be also cancelled.

VI.—*As relates to Relative Rank.*

1. Chief engineers of more than 10 years' seniority to rank with commanders according to seniority; the seniority of the chief engineer to date from attaining 10 years' seniority in that rank.
2. Chief engineers of less than 10 years' seniority to rank with, but after lieutenants of over eight years' seniority.

3. Engineers

3. Engineers over eight years' seniority to rank with, but after lieutenants of less than eight years' seniority.
4. Engineers of less than eight years' seniority to rank with sub-lieutenants, according to date of commission.
5. Assistant engineers to rank with, but after sub-lieutenants.

#### VII.—*As relates to Charge Pay.*

In consideration of the increased responsibilities attaching to engineer officers in charge of engines in the larger ships of modern construction, rates of charge pay from 3s. a day to 7s. a day will be granted to the engineer officers in charge of engines of 3,000 indicated horse-power and upwards, according to the special circumstances of each case, which circumstances will in each case be decided by their Lordships. In ships having engines of under 3,000 indicated horse-power, the rates of charge pay will continue as fixed by Her Majesty's Order in Council of 26th October 1875.

#### VIII.

1. My Lords are also pleased to direct that the engineer officers now holding, or who may in future obtain 1st class professional certificates from the Royal Naval College, and officers who have taken the first place in each year amongst those who now hold, or may in future obtain 2nd class professional certificates, shall be advanced to the rank of chief engineer after 10 and 13 years' service respectively, provided the officers have conducted themselves satisfactorily in every respect, and proved themselves thoroughly efficient in the performance of their duties.
2. The foregoing regulation shall apply to engineer officers who hold diplomas of the 1st class, and those who obtained the first place in each year amongst the 2nd class fellows of the Royal School of Naval Architecture.
3. The senior engineer in any ship, if over eight years' seniority in that rank, shall be allowed to mess in the ward-room should he be desirous of doing so.
4. A cabin shall be provided, wherever it is practicable, for the two senior engineers to sleep in.

#### — 2. —

#### ENTRY OF ENGINEER STUDENTS IN HER MAJESTY'S DOCKYARDS.

MY Lords Commissioners of the Admiralty are pleased to direct that the following regulations for the entry of engineer students in Her Majesty's dockyards shall be substituted for those now in force.

2. Vacancies for appointments as engineer students in the dockyards are open to public competition. The dockyard at which engineer students are entered each year will be fixed by their Lordships.
3. The list of candidates for these Appointments will be kept at the Admiralty in London. All applications for the forms to be filled up by persons who wish to compete must be addressed to the Secretary of the Admiralty before the 1st of March in each year. Such applications should state the place at which the candidate desires to be examined.
4. Candidates must not be less than 14 nor more than 16 years of age on the first day of the examination. Proof of age will be required by the production of a certificate of birth, or by declaration before a magistrate. Evidence of respectability and good character must also be produced. All candidates must be children of British subjects.
5. Candidates are to understand clearly that they will be first required to satisfy the Admiralty as regards their age, respectability, good character, and physical fitness, before they can be considered eligible for entry into the dockyard, and if these conditions are satisfactory, they will then be examined by the Civil Service Commissioners in educational subjects.
6. Candidates in or near London will be medically examined by the Medical Director General of the Navy at the Admiralty. Those residing near one of Her Majesty's dockyards, or one of the first reserve ships, will be examined by the medical officers attached thereto. Special arrangements will be made, if necessary, on application, with reference to candidates from more distant localities. All candidates must produce certificates to



the satisfaction of the examining medical officers that they have been re-vaccinated, or they will be re-vaccinated before they can be considered eligible for entry into the dockyard.

7. The examination will commence on the first Tuesday in May in each year, and will be held by the Civil Service Commissioners in London, Liverpool, Portsmouth, Devonport, Bristol, Leeds, Newcastle-on-Tyne, Edinburgh, Glasgow, Aberdeen, Dublin, Belfast, and Cork.

8. The following will be the subjects of examination, and the maximum number of marks for each subject:—

*Arithmetic	- - - - -	300
English—		
*Writing from Dictation	- - - - -	100
*Composition	- - - - -	100
Grammar	- - - - -	150
		350
French—		
Translation into English	- - - - -	100
Grammar	- - - - -	50
		150
Geography	- - - - -	100
Algebra (up to and including quadratic equations)	- - -	300
Geometry (the subjects of the first six books of Euclid's Elements)		300
		1,500
TOTAL	- - -	

Candidates will also be tested as to their ability to read aloud with clearness, distinctness, and accuracy, and without hesitation. Stammering, or any imperfection of utterance, will be regarded as a disqualification.

9. Candidates who fail to pass in the first three subjects (those marked with an asterisk), or in reading aloud, will be disqualified, and their other papers will not be examined. The candidates who display a competent knowledge of all those subjects, and who obtain not less than 750 marks in the aggregate, will be classed in one general list in order of merit, according to the number of marks gained, and will be eligible for appointment as engineer students in one of the dockyards, according to the number of appointments which it may be decided to make that year.

10. The successful candidates will be entered as engineer students before the 1st July in each year, and must join with their parents or guardians in a bond for 300 £. to enter, if required, into Her Majesty's naval service as assistant engineers, if at the expiration of their training they should obtain certificates of good conduct and efficiency for entry in that capacity.

11. The parents or guardians of all engineer students entered in future will be required to pay the sum of 25 £. a year for each student during the first three years of his training.

12. The first payment of 25 £. is to be made before the student is entered in the yard, and the second and third payments of 25 £. each are to be made on or before the 30th day of June in each of the two succeeding years. The payments are to be made to the cashier of the yard to which the student is appointed. In case of failure of payment the student will be discharged.

13. Board and lodging will be provided for engineer students, and they will be required to reside in one of the dockyards.

14. The weekly pay of engineer students during their training will be as follows, provided they are well reported on by the officers:—

First year	- - - - -	One shilling	} a week.
Second „	- - - - -	Two shillings	
Third „	- - - - -	Three „	
Fourth „	- - - - -	Five „	
Fifth „	- - - - -	Eight „	
Sixth „	- - - - -	Ten „	

15. Engineer students will be under the supervision of the Captain of the Steam Reserve and a staff of competent officers, and subject to such rules and regulations as their Lordships may deem necessary.

16. Special regulations will be made for engineer students in the dockyards, so as to make a distinction between them and the workmen.

17. Engineer



17. Engineer students will remain for six years at one of the dockyards for practical training in the workshops, and to receive instruction in iron shipbuilding. While the engineer students are being instructed in iron shipbuilding they are to be under the direction of the Chief Constructor. They will attend the dockyard schools for such periods, and to pursue such studies as may from time to time be determined on; they will also pass a portion of their time in the drawing office. Means will be afforded them of acquiring the groundwork of the knowledge required by a naval engineer respecting the working of marine engines and boilers, including those repairs which can be carried out afloat, the practical use of the various instruments used in the engine-room, including the indicator, and of becoming generally acquainted with the duties of a naval engineer.

18. Engineer students will be examined once a year under the direction of the President of the Royal Naval College. They will be examined by the engineer officers of the Admiralty at the end of the fourth, fifth, and sixth years of their service, as to their practical acquirements and knowledge of steam machinery. Two prizes will be given annually at each dockyard to the engineer students most highly reported on as regards their skill as workmen. Practical engineering will be considered an essential subject at examinations, and in the lists showing the results of examinations the numbers obtained in practical subjects will be shown distinct from those obtained in educational subjects. No engineer student will be granted a qualifying certificate for entry at the Royal Naval College unless he obtains at least 50 per cent. of the total number of marks for practical engineering on his final examination.

19. The examination of the sixth-year students is to be held in time to allow the result to be known by the 1st of July in each year, and it will include tests of their skill as workmen. Those found qualified will, on the completion of their term of service at the dockyards, proceed to the Royal Naval College at Greenwich as acting assistant engineers, on probation, on the 1st October succeeding the examination, where they will pass through a course of higher instruction during one term.

20. Those engineer students who fail to pass the examination at the end of their six years' service, will be allowed to remain one year longer at the dockyards, and will then be re-examined, when, if they are unable to pass, they will cease to be eligible for the rank of naval engineer. The pay of a student during such year of probation will be the same as during the sixth year.

21. Engineer students will not be entered as acting assistant engineers until they have been pronounced fit for Her Majesty's service by the medical officers, and have learned to swim.

22. Acting assistant engineers will be provided with quarters while at Greenwich. During their first term they will be paid 6s. a day, and 1s. 6d. a day toward the mess expenses. Those selected for further study will receive their full pay, and 1s. 6d. a day toward the mess.

23. The term for study at Greenwich will be from the 1st October to the 30th June following. All will be examined, under the direction of the President of the Royal Naval College, on the completion of their term at Greenwich, and will receive certificates according to their merit, in three classes. Those who obtain first-class certificates will receive commissions dated the same day as their acting appointments. Those who obtain second-class certificates will receive commissions dated six months after the date of their acting appointments, and those who obtain third-class certificates will receive commissions dated the day after their discharge from the Royal Naval College. The additional time given for first-class certificates and second-class certificates will reckon in all respects as time served as assistant engineer.

24. Two assistant engineers will be selected annually from those who take the highest place at the examination on the completion of their term at Greenwich, to pass through a further course of scientific instruction, if they desire it. These two will be allowed to remain two more terms at Greenwich, on the completion of which they will be sent to sea as assistant engineers, and, after one year's service at sea, they will be considered eligible to fill positions in the dockyards and at the Admiralty.

25. Those passing the second and third terms at Greenwich will be attached, during the vacations, between the 30th June and 1st October, to the dockyards or steam reserves, where they will attend trials of new and repaired engines, and obtain experience respecting the duties they will have to perform at sea.

26. No assistant engineer who has passed three terms at Greenwich will be allowed to leave Her Majesty's service within seven years of the completion of his term at Greenwich, unless he shall pay the sum of 500*l.* to defray the charges of his education. Such resignation to be subject in each case to their Lordships' approval.

27. *N.B.*—The above regulations will be generally followed, but my Lords will modify them from time to time as they may consider desirable.

28. Art.           page   of the dockyard instructions are cancelled, and the enclosed slip is to be substituted for them.

*Temporary Provisions.*

29. Engineer students, whose time will be completed at the dockyards in January 1878, may, if they desire it, come up for examination in June 1877, and if found qualified will join at Greenwich on the 1st October following; those not qualified will remain at the dockyards until June 1878. A similar course will be adopted as regards those students whose time will be completed in January 1879.

30. For the present year (1877) the examination for entry into the dockyards as engineer students will commence on Tuesday, the 11th September, and applications to compete may be addressed to the Secretary of the Admiralty up to the 31st July next, after which date no application can be entertained. Such applications should state the place at which the candidate desires to be examined.

31. Candidates for the examination in September next must be not less than 14 nor more than 16 years of age on the first Tuesday in May (*i.e.*, 1st May 1877).

32. The examination in September next will be held in Her Majesty's dockyards at Chatham and Sheerness, as well as at the places named in paragraph 7.

*Uniform, Holidays, Books, Sea Chest, &c.*

1. Engineer students are to be provided with—

- |  |               |
|--|---------------|
| 1 Uniform tunic  | } Blue cloth. |
| 1 „ trousers   |               |
| 1 „ waistcoat  |               |
| 1 „ cap, peak $\frac{1}{2}$ turn down, with usual device of the Civil Branch.  |               |
| 1 working uniform suit of blue serge. Eight buttons placed by four to be worn on the breast of the tunic, and a single purple velvet stripe round the sleeve of the tunic. |               |
| 1 sea chest complete, with name in full painted on top,  |               |

						<i>Ft.</i>	<i>in.</i>
Length	-	-	-	-	-	3	6
Breadth	-	-	-	-	-	2	0
Height	-	-	-	-	-	2	3

2. The above are to be provided at the expense of the engineer students, their parents or guardians, as well as all other articles of clothing and necessaries. Board and lodging will be provided gratuitously.

3. Copies of the authorized text books necessary for use in the dockyard schools will be supplied gratuitously to the engineer students, but all losses will have to be made good. The books will become the property of the engineer students when they leave school, free of charge.

4. Three weeks' leave (18 working days) on full pay will be granted each year to all deserving engineer students.

5. Engineer students at present under training will be permitted to wear the authorized uniform should they desire to do so.

## — 3. —

## ENGINE ROOM ARTIFICERS.

My Lords Commissioners of the Admiralty having decided to improve the position of the engine-room artificers of the fleet by increasing their pay and comfort, and by giving them the means of promotion to a higher grade, by creating a new rating of chief engine-room artificer, the following regulations are hereby established:—

1.—*Engine Room Artificers.*

						<i>s.</i>	<i>d.</i>	
Pay—under	3 years' service	-	-	-	-	5	3	a day
	above 3 „ „	-	-	-	-	5	9	„
	„ 6 „ „	-	-	-	-	6	-	„
	„ 10 „ „	-	-	-	-	6	3	„
	„ 13 „ „	-	-	-	-	6	6	„

{ On re-engaging for a further term of 10 years.

Age for entry in future to be from 21 to 30.

Rank as at present (next below chief carpenter's mate).

2.—An acting engine-room artificer must obtain, before being confirmed in the rating, a certificate from the chief engineer, or engineer in charge, approved by the commanding officer, that he is capable of taking charge of a watch in the stoke-hold, and has proved himself an efficient workman, and is deserving of confirmation. Before receiving the first increase of pay, after three years' service he must obtain a certificate from a chief engineer or engineer in charge, approved by the commanding officer, stating that he is capable of taking charge of a watch in the engine-room.

### 3.—Chief Engine Room Artificers.

(Number to be limited to 100.)

Rank—To be next above the chief carpenter's mate.

Pay—under 3 years' service	-	-	-	-	-	-	-	-	-	s.	d.
										6	9 a day.
above 3	„	„	-	-	-	-	-	-	-	7	- „

Extra pay of 3 s. 6 d. a day to be granted only when employed on ships other than those to which they belong, executing repairs.

4.—The new scale of pay to commence from 1st April last.

In future no man is to be advanced from one scale of pay to the higher, unless he has maintained a "very good" character during the previous 12 months.

### 5.—Advancement.

Engine-room artificers who have completed 10 years' service as such will be qualified for advancement to the new rating of chief engine-room artificers, provided they have maintained a "very good" character during the previous 12 months, and have re-engaged for a second period of 10 years. Fifty engine-room artificers will be advanced at once to chief engine-room artificers, notwithstanding they have not completed 10 years' service, on condition that previous to advancement they enter into a new engagement to serve 10 years.

### 6.—Uniform.

Blue cloth tunic, or close fitting pea jacket, with uniform buttons.

Blue cloth waistcoat.

Blue or white trousers.

Cap as at present.

Chief engine-room artificers to wear three buttons on each sleeve of the tunic.

### 7.—Pensions.

These chief petty officers to be pensioned on the same scale and under the same regulations as other chief petty officers; and if they are required or allowed to serve beyond 20 years, they will be granted the usual additions allowed to other chief petty officers under similar circumstances.

They will not be allowed to receive their pensions while serving.

### 8.—Mess, &c.

Engine-room artificers and chief engine-room artificers will all mess together in a separate mess place which will be provided for them, and a stoker will be allowed to take care of the mess place, hammocks, &c.

NOTE.—Although chief engine-room artificers may be reduced to the grade of engine-room artificer for misconduct, engine-room artificers cannot be disgraced, unless they have previously served in another rating of a lower grade.



NAVY (ENGINEERS, &c.).

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COPY of the REGULATIONS issued by the Admiralty in regard to ENGINEER OFFICERS, ENGINEER STUDENTS, and ENGINE ROOM ARTIFICERS in the ROYAL NAVY.

(*Mr. Algernon Egerton.*)

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*Ordered, by The House of Commons, to be Printed,  
7 June 1877.*

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RETURN to an Order of the Honourable The House of Commons,  
dated 28 June 1877;—for,

COPIES "of the OFFICIAL DOCUMENTS relating to the Design of H.M.S.  
'INFLEXIBLE:':"

"And, of the CORRESPONDENCE between Mr. *E. J. Reed*, M.P., and the  
Admiralty in connection with the Stability of this Ship."

Admiralty, }  
28 June 1877. }

THOS. WOLLEY,  
Chief Clerk.

(S. 7104—73.)

From the Director of Naval Construction to the Controller, for Consideration  
while the Design is in Progress.

3 June 1873.

Subsequently corrected, to show the modifications made to meet the views of  
Captain Hood, the directions of the Controller, and the exigencies of the design as it  
progressed.—*N. B.*, 16/7/73.

THE Programme for 1873–74 provides for building 13–100ths of a new "Fury"  
at Pembroke, and it is now necessary to decide as to what the armour, armament,  
and dimensions of that ship are to be.

In considering the matter, we have taken the conditions of a ship of the "Fury"  
type to be those laid down by Sir Spencer Robinson in February 1869, when the  
design of the "Devastation" and "Thunderer" was decided on; viz., that the  
ship is to combine heavy guns, thick armour, and great handiness. These being  
secured, the following features were to be added: "The greatest speed that  
could be obtained, coal enough to provide for the necessities of warfare in the  
"Channel, Mediterranean, or Baltic, such sea-going qualities as will enable opera-  
"tions in these seas to be performed with safety, good arrangements for officers  
"and men, and as little sail-power as is consistent with the use to be made of a  
"fleet in time of peace."

In deciding upon the power of the guns it is necessary to remember that, as  
it will take about four years to build the ship, great advances may be made in  
power of naval guns by the time she is completed, because it requires much  
less time to devise and construct a new gun than it does to build such a ship.

A 60-ton gun is already spoken of, both at Woolwich and Elswick, as being  
within the present powers of the factories; and when the gun is once constructed  
it is quite certain that machinery may be devised to control and work it. It  
may be that before the ship is completed a still heavier gun may be in process  
of manufacture.

We do not consider it to be essential to the efficiency of the English Navy  
that it should always have ships impregnable to the heaviest existing guns; but  
we do think it essential that the English ships should have guns of the most  
powerful description which can be made and worked, even up to hundreds of  
tons, if such masses of material can ever be wrought.

We propose, therefore, that the new design should carry 60-ton guns, and  
should be capable of receiving much heavier guns hereafter.

It is not impossible, upon the dimensions of the "Fury," to protect the vital  
parts with armour proof to the 60-ton gun, supposing it to throw a 15-inch pro-  
jectile weighing 1,200 lbs. with an initial velocity of 1,300 feet per second; but

it would not be possible to make a ship of this size proof to heavier guns than this, nor will it be possible in this case to do more than protect the parts which are absolutely vital. The turrets themselves cannot be made proof to the gun. The 35-ton gun turrets are not proof now to the guns they carry, but can be penetrated by those guns at 600 yards.

It may be said that instead of making the vital parts of the ship proof to the

18

60-ton gun, and leaving the thickness of the turret armour at  $\pm 6$  inches, as we propose, it would be better to adopt some intermediate thickness, and plate both the vitals of the ship and the turrets with this thickness. If that were done instead of plating the vital parts of the ship with 24 inches of armour, we should

*about*

have to be content with  $\wedge$  20 inches.

It is to be borne in mind, too, in the matter of the turrets, that by the introduction of machinery it will be possible to reduce so considerably the number of men in them as to make their impregnability less important than it has been, so far as the preservation of life is concerned, and the increase in the size of the gun is a means of protection to the gun itself from injuries by the blows of projectiles.

We should, therefore, consider that the first place from which to remove the armour in order to admit still heavier guns than those provided for would be the turrets. Thus, if it became desirable hereafter to mount four guns of 100 tons, it would be possible to do this with the same arrangements, by simply removing the armour from the turrets and preserving a cover from musketry and mitrailleurs, or having four unarmoured single-gun turrets at the four angles of the battery.

We do not see that any increase in the penetrating power of guns can make it desirable to dispense with hull armour, merely because it is penetrable to some guns within certain ranges. It will always remain impenetrable to all guns beyond certain ranges, and to many guns at all ranges, and must therefore be advantageous as a means of security to the vital parts of the ship.

The limit to its thickness is to be found, we think, in the size and cost of the ship. So far as we have gone at present, 14 inches of armour have been found to be consistent with high speed, perfect turning power, and moderate draught of water. No one of these conditions imposes a limit, but a single ship costs nearly half a million sterling, and it is exposed to many risks.

The losses and casualties of a naval engagement would do much, there is no doubt, to bring out the imminence of these risks, and would perhaps show that the large and costly ship is even more exposed to them than the smaller one.

It may be that the limit of size and cost has been reached in the "Fury," and that, with her bulk and cost, the maximum of advantages may be obtained.

We are ourselves disposed to think that this is so, and that there may be retrogression in this respect, as more experience is gained with the powers of the torpedo, the ram, and other submarine instruments of attack.

We should prefer to adhere to this bulk and cost in the new design, because we shall then be able to give the ship armour protection to her vital parts which will be proof to the new gun now preparing by Sir W. Armstrong for the Italian Government.

We therefore lay down the following conditions for the design:—

1. A speed of at least 14 knots at the measured mile.

100

2. Four guns of 60 tons with ~~470~~ rounds of ammunition per gun\*.

\* (120 will be given if possible.)

3. To be capable of mounting and fighting guns of 100 tons, when they are produced.

18

4. The 60-ton guns to be protected by armour  $\pm 6$  inches thick.

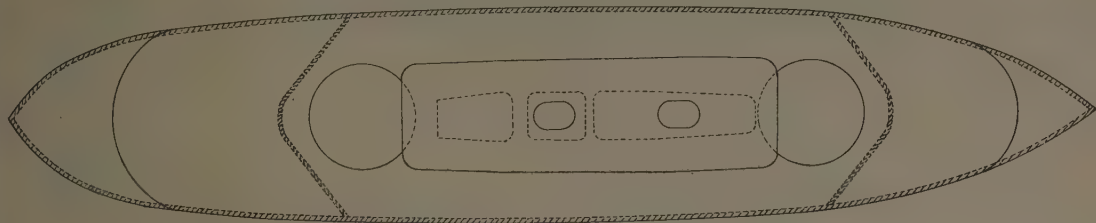
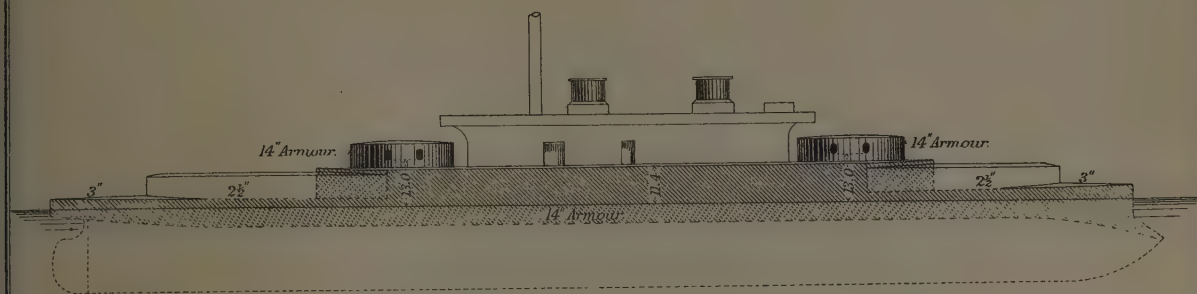
5. The machinery, magazines, and buoyant power of the ship, to be protected with the greatest thickness of armour consistent with the other conditions of the design; 24 inches, if possible.

6. The cost not to exceed that of the "Fury."

7. To carry coal sufficient for 3,000 knots at sea, with 10 knots speed, with space for a still larger supply.

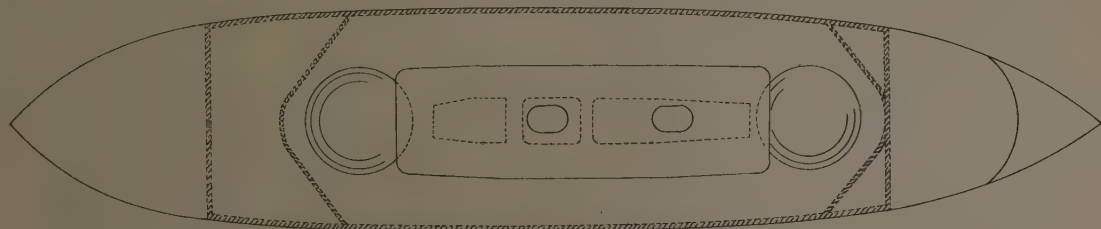
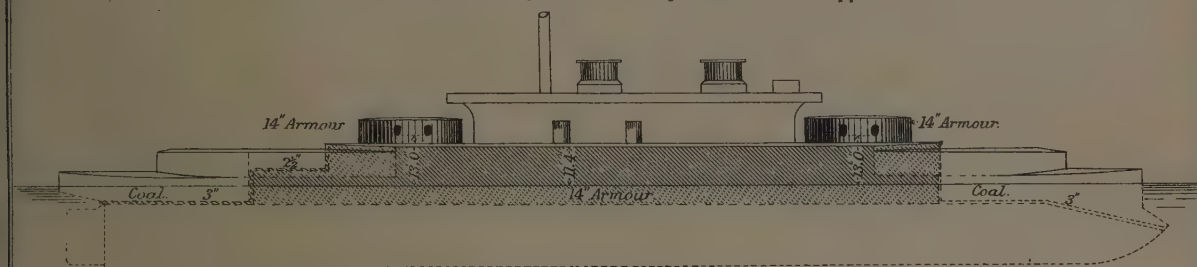
8. To

# "FURY."



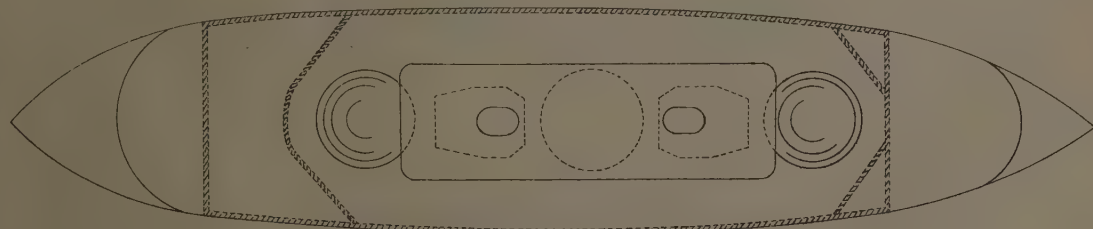
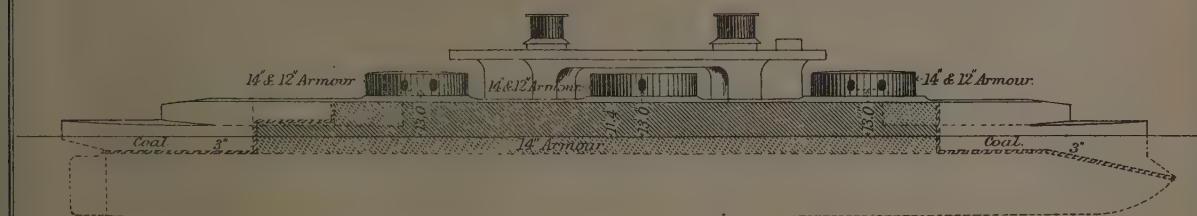
## NEW "FURY" (Nº1).

Same Armament and Speed as "Fury" and similar upper-works.



## NEW "FURY" (Nº2).

With One 50 Ton Gun and Four 35 Ton Guns in Turrets. Speed 13 knots.

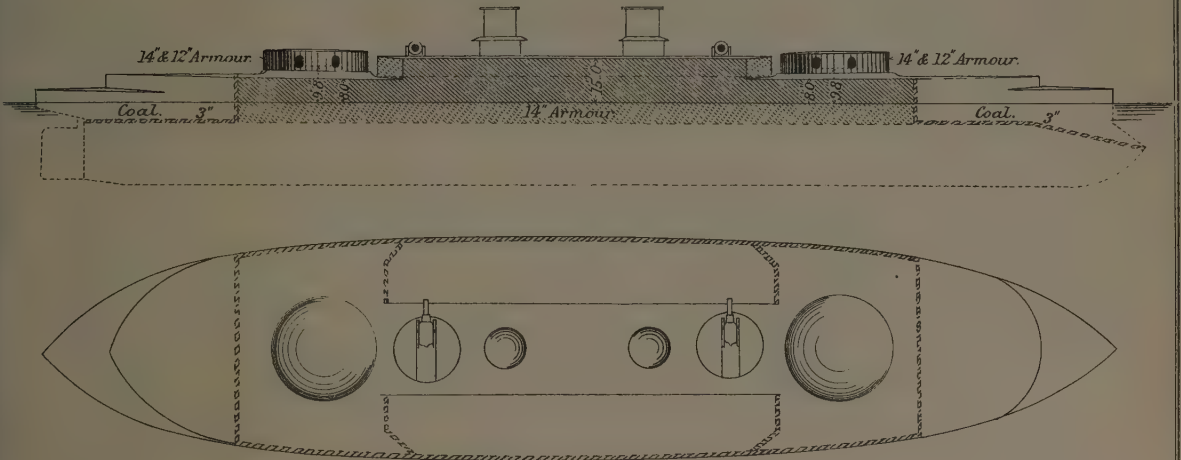






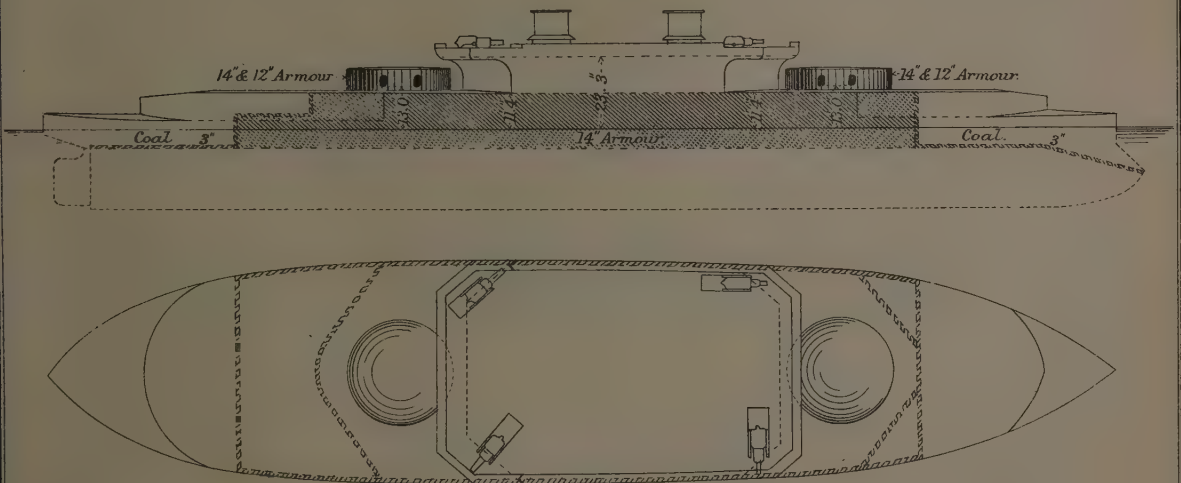
### NEW "FURY" (Nº 3).

With 4 35 Ton Turret Guns, and 4 18 Ton Guns, Mounted en barbette.  
Speed 13 knots.



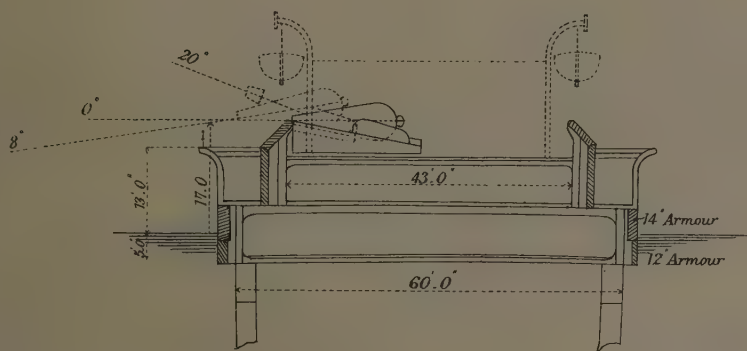
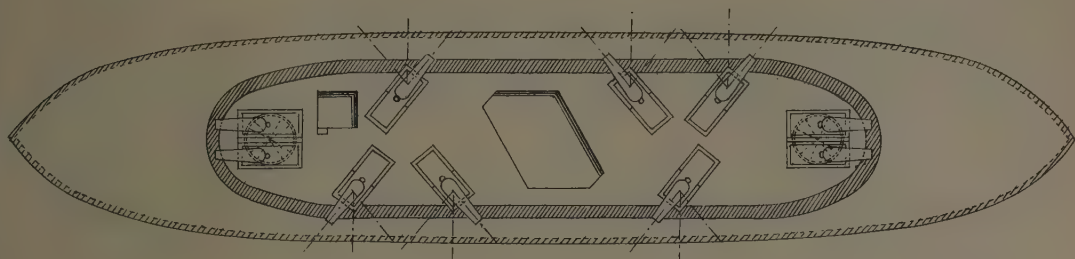
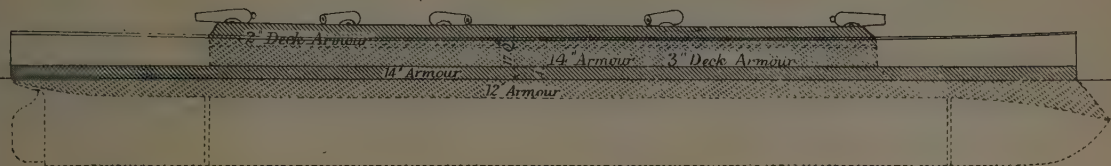
### NEW "FURY."

With 4 35 Ton Turret Guns, and 4 12 Ton unprotected Guns on the Flying Deck.  
Speed same as "Fury."



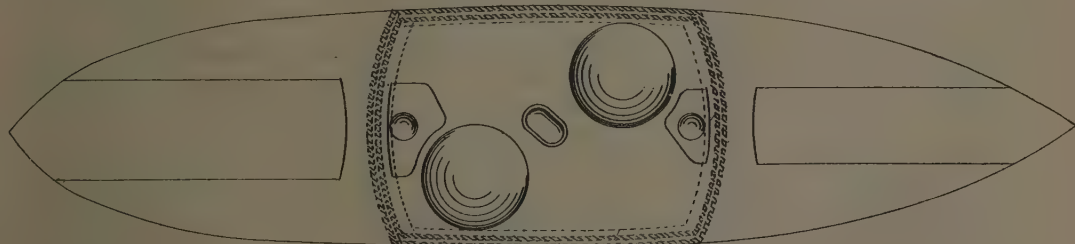
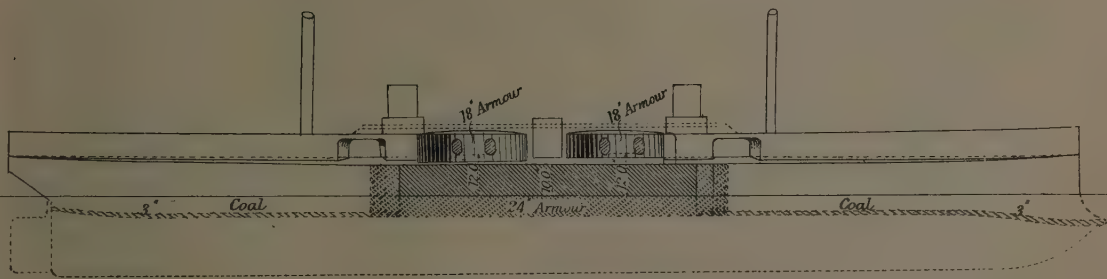


Twin Screw Iron Clad Vessel to carry 10-35 Ton Guns, Mounted en barbette.



"INFLEXIBLE".

4-60 Ton Guns.







8. To be capable of passing through the Suez Canal when lightened of coal.

9. To be sheathed to prevent fouling.

10. To have a deck both forward and aft about 17 feet out of water, without interference with the direct fire in line with the keel, of at least two guns.

*To have two masts for signalling and for crows' nests, but no yards to*

11. A small quantity of sail to be added, but not to exceed what may be worked *be fitted upon them.*

*by the crew, which she would have if there were no sail.*

12. The breadth and draught of water not to exceed what will allow the ship to enter the docks at Portsmouth, Chatham, <sup>Malta,</sup> and the lift dock at Bombay.

On this last point, it is to be observed that to make the ship capable of entering the Devonport, Malta, and Bermuda Docks, it will be necessary to reduce her breadth so much as to deprive her of stability when the ends are so perforated and injured as to add nothing to it, and we do not think this sacrifice should be made.

Proceeding upon these conditions we arrive at the following design:—

A ship having an armour-plated central citadel 110 feet long and 75 feet wide, extending, when not in action, <sup>six</sup> five feet under water and 10 feet out of the water, and when in action <sup>seven</sup> six feet under water, and nine feet out of the water. Out of this rise the two turrets having <sup>18</sup> 16 inches of armour all round. Their bases will be protected down to the deck upon which they rest by 20 inches of armour on sides and front and 18 inches on the rear. From this deck <sup>three</sup> to two feet under water at fighting draught there will be 24 inches of armour *(excepting the after end, which has 22 inches),* completely round the citadel <sup>16</sup> and below this to six feet under water <sup>seven</sup> 12 inches of armour.

Before and abaft this citadel there will be an armoured deck, <sup>seven</sup> six feet under water extending to the bow and stern.

By forming a portion of the space above this deck in coal bunkers to hold 800 tons of her coal, we can arrange that no perforation by shot or shell can immerse the ship more than one foot beyond her fighting draught.

We hope, by sub-division and cellular sides, to prevent any appreciable increase of immersion or decrease of stability, but we should not be satisfied with the ship if we could not say, as we now can, that with any possible amount of damage to the unarmoured ends by shot or shell, the ship will continue to float in perfect safety before any damages are made good.

Owing to the great breadth of beam given, mainly for the purpose of obtaining stability after perforation of the unarmoured parts, we are able to place the turrets so far apart laterally as to obtain direct fire right ahead and astern in conjunction with a high deck forward and aft, and with two pole masts, with sail set flying for use as steadying sails, and as a standby in the event of the total disablement of the machinery. We do not consider that a greater weight than 100 tons should be taken for masts, rigging, and sails, seeing that 28 tons represent an additional thickness of armour to both turrets of one inch, so that the use of canvas will be obtained by the sacrifice of about three inches of turret armour leaving it at 16 inches, when it might be 19 inches. The arrangement of turrets given by us is preferred to four single gun turrets, because it gives four guns on either broadside, while the other arrangement would give only two, and would be much heavier.

The draught of water which will allow the ship to be docked at Bombay appears to be 24 feet; we have therefore fixed this as the mean draught.

We have abandoned the plough bow, as in the cruising ironclad just approved, and have substituted for it a sharp bow not projecting beyond the stem at the water-line, to which we add a very powerful bayonet ram formed by an extension

sion of the armoured under-water deck. We have done this for two reasons: first, because as there is no longer any armour supporting the stem, the armoured deck forms a much better base for the ram than the stem would; and secondly, because it appears to be desirable to avoid the great heaping up of broken water which is inseparable from the plough bow.

This design is so much superior to those which we had under consideration previously, that we only present these former designs to show what might be done were the principle of sinking the ship one foot on going into action, and incurring a risk of as much as another foot of immersion while in action, objected to.

In all these designs, except that submitted for approval, the draught remains unaltered by the fire of the guns so long as the armour is not perforated, but the armour in no case exceeds 14 inches.

One of them is a design for a vessel of the same type, of the same dimensions, thickness of armour, and power of guns as the "Fury," but with 35-ton guns mounted *en barbette*, and increased in number to 10.

This is the design which was prepared by Mr. Hounsom of this office for the late Emperor Napoleon III., and which was sent to you through his Royal Highness the Duke of Edinburgh some few weeks ago. Instead of reporting upon it at once, it has been retained for consideration with the design of the new ship.

If the ship of 75 feet breadth is adopted, as we recommend that it should be, it may be built in one of the new extension docks at Portsmouth, and completed there, but it could not be built at Pembroke without great inconvenience and cost, and it could not under any circumstances receive its armour plating there, but would have to be completed at Portsmouth or Chatham.

(signed) *Nathl. Barnaby.*

These papers and drawings are referred to Captain Hood for his remarks.

4 June 1873.

(signed) *W. H. Stewart.*

The New Design compares with the "DEVASTATION" and "FURY" as follows:—

	"DEVASTATION."	"FURY."	NEW.
Length - - - - -	285 feet -	320 feet -	320 feet.
Breadth - - - - -	62 feet -	63 ft. 10 in. -	75 feet.
Mean draught of water - - - - -	26 ft. 8 in. -	26 ft. 9 in. -	24 feet.
Displacement - - - - -	9,300 tons -	10,886 tons -	11,000 tons.
Thickness of hull armour at and above water-line	12 inches to 10 inches, tapering to.	14 inches to 11 inches, tapering to.	24 inches to 18 inches, not tapering.
Thickness of turret armour - - - - -	14 inches to 12 inches.	14 inches -	16 inches.
Weight of armour, including protective deck plating.	2,580 tons -	3,260 tons -	3,000 tons.
Weight of guns and ammunition - - - - -	400 tons -	400 tons -	700 tons.
Number of men - - - - -	329 -	350 -	350.
Approximate cost of hull and engines - - - - -	306,000 l. -	376,000 l. -	376,000 l.
Height of upper deck out of water, in feet -	11 feet.	11 feet -	17 feet.

Captain *Hood* to the Controller of the Navy.

Admiral *Stewart*,

9 June 1873.

HAVING carefully considered the proposed new design of an armour-protected turret vessel, also the modified designs of the "Fury," as shown in plans 1, 2, 3, 4, and that of the vessel armed *en barbette*, the question appears to me to be as follows:—In vessels of the "Devastation" and "Fury" types, we have, as compared with other vessels actually in course of construction ("Peter the Great" being the sole exception), by far the most powerful fighting machines in the world, for service in European waters; but it is known that in Italy two double turret vessels are to be built, the vital parts of which are intended to be protected



protected by armour 22 inches in thickness, and each turret armed with two 60-ton guns; Mr. Reed has also (I am informed) received instructions to prepare the design of a vessel for the Prussians, protected over the vital parts with similar thickness of armour. These facts lead me to conclude that during the next three or four years other European powers will construct vessels protected over the vital parts with the thickest armour which can be carried, and armed with far heavier guns than have as yet been contemplated for the armament of ships; the 35-ton gun would be powerless against armour of the thickness I have named, and the armour of the "Fury" type could be penetrated easily, at very considerable ranges, by 60-ton guns. Under the circumstances, it appears to me imperative that in the new armour-protected vessel to be constructed (which will take probably between three and four years to complete), the necessary provision, both with regard to a very considerable increase in the thickness of the armour protection, and the power of the guns, should be made; in order to ensure that when completed, the powers of offence and defence of this vessel may, in so far as can be at present foreseen, meet the requirements of that date.

In the new design provision is made for protecting the turrets with 16 inches of armour, the breastwork and foremost bulkhead with 20 inches, the after bulkhead with 18 inches, the vicinity of the water-line, for two feet above and under water, is protected by 24 inches, and below that by 12-inch armour. The constructors state, "that with any possible amount of damage to the unarmoured ends of this vessel by shot or shell, she will continue to float with perfect safety before any damages are made good"—a most important point. On examining the new design it is evident that, on account of superstructures forward and aft, it has been necessary to place the turrets on either side of the midship line, in order to obtain fire in line with the keel with one gun from each turret. This position of turrets limits considerably the bearing which can be commanded by the fire of all four guns, and the superstructures interfere considerably with the delivery of fire upon an enemy's vessel when crossing the bow or stern; but in a vessel where the length protected by very thick armour must be very considerably reduced, and the general freeboard low, it is absolutely necessary to have superstructures forward and aft of the height shown in the new design, on which the boats will be stowed and the anchor gear worked. The height of freeboard forward thus obtained will also enable the vessel to steam against a head sea. In the new design the bearing over which the fire can be delivered from both turrets will certainly not be nearly equal to that in the "Fury" type; but the point of primary importance in a vessel of the nature of the new design, is the protection of the vital parts; and after this condition has been fulfilled, the best arrangement with regard to the efficient delivery of fire from the guns must be made. The extreme width of the new design will cause difficulty with regard to docking; but this width is absolutely necessary in order to enable the necessary thickness of armour to be carried as disposed, and buoyancy secured when the unarmoured ends are perforated.

On the assumption that it is necessary to commence a vessel which, when completed, shall possess, at all events, equal powers of offence and defence with any vessel as yet contemplated by other European powers, I consider the general features of the new design, with the exception of the proposed masts, to be satisfactory, but submit the following modifications (which appear to me very desirable) for consideration:—

First.—I strongly recommend that the idea of having masts in such a vessel should be abandoned; the small amount of sail which could be carried on the proposed masts would be of very slight value in the event of the most remote contingency of both sets of engines being totally disabled, and in action the fall of the masts might interfere considerably with the delivery of fire from the turrets. If the masts are abandoned, a weight of about 100 tons would be saved, which I strongly recommend should be utilised as follows:—

(1.) The armour protection of the turrets increased from 16 to 18 inches; this would absorb 56 tons, and very materially increase the protection of the guns.

(2.) The armour protection in the vicinity of the water-line, viz., from two feet above and two feet under water at the normal draught, is 24 inches thick, but below this the armour is only 12 inches in thickness. I consider

this disposition to be decidedly objectionable, as a moderate roll would thus expose the vital parts to be penetrated easily by even the 25-ton gun; and I consider it very advisable that the thickness of the armour in the vicinity of the water-line should be reduced from 24 to 22 inches, and the weight thus saved added to the 44 tons remaining from the abandonment of the masts utilised in increasing the thickness of armour below the water-line belt from 12 to 16 inches.

Secondly.—The width of the superstructure forward should be reduced, if possible, by five feet, in order to enable a better right-ahead fire to be obtained. The after part of the fore superstructure, and the fore part of the after superstructure, should be altered in shape, to lessen the effect of the concussion of firing, and increase the angle of training of the after-turret.

Thirdly.—The proposed position of the funnels is decidedly unsatisfactory; they should, if possible, be placed in the centre-line, one before the foremost turret, the other abaft the after-turret. An air-shaft will probably be required; if so, this should be placed in the centre-line of vessel between the turrets, so as to interfere as little as possible with the fire of the guns.

The thickness of iron intended to be placed over the deck of the armoured part of vessel is not stated; this should *certainly* not be less than three inches, and if the weights will allow, three and a-half inches; the thickness of the armoured deck to be placed six feet below water, should, I consider, be three inches,

(signed) *A. W. A. Hood.*

*C. N. A.*

As Captain Hood concurs in the opinion that the new ship of the "Fury" type, or rather, I should say, of sea-going turret ship, which it has been proposed to their Lordships to commence this year, should be designed to carry the thickest armour and heaviest guns yet proposed, I am about to submit that this ship, when the design is worked out and approved, should be laid down at Portsmouth in one of the new Docks, and the second-class armoured corvette already approved commenced at once at Pembroke. The remarks and observations of the D. N. O. are referred to you for consideration and report.

10 June 1873. (signed) *W. H. Stewart.*

The observations of the D. N. O. are very full and very satisfactory. Forward them for consideration of the members of the Board with the proposed design.

21 July 1873. (signed) *A. Milne.*

Controller,

4 July 1873.

THE design for the "Inflexible" referred to in my preliminary report of the 3rd June, and in that of Captain Hood of the 9th June, has now been worked out so far as to admit of its being laid before their Lordships. Various modifications have been made to meet the views of Captain Hood. These are chiefly:

1. The armour has been increased from 12 inches to 16 inches in the under-water strake, extending to six feet under water. The total depth of armour and of armoured deck below water has also been increased to satisfy my own view, to seven feet.

2. The turret armour has been increased to 18 inches.

3. The armour plating on the breastwork deck has been made 50 per cent. thicker than it is in the "Fury."

The constructors have also considered it desirable to extend the battery somewhat, to give more space for up-takes and downcast shafts within it, and to increase the amount of stability in the event of the entire destruction of the parts of the ship lying before and abaft it.

These



These changes have obliged us to modify the conditions laid down in our former submission to the following extent :—

Retaining the maximum thickness of armour at 24 inches, and the thickness of the side armour above the main deck at 20 inches, we propose—

1. To reduce the number of rounds per gun to 100, as we consider that the proportion of effective shots should be much greater where the projectiles are so costly; and we should suppose that measures will be taken to prevent random firing.

2. We have taken only 30 tons for two signal poles, capable of carrying a little fore-and-aft sail upon an emergency, instead of 100 tons for a jury rig.

We have taken sufficiently powerful engines to drive the ship 14 knots an hour, when at her normal load-line, on the measured mile.

As compared with the "Fury," the ship will stand as follows :—

1. Same size, cost, speed, and coal endurance.
2. Three feet less draught of water.
3. Sixty-ton guns instead of thirty-five tons.
4. From eight inches to 10 inches thicker armour on the central citadel.
5. The ends of the ship made impregnable by an under-water shot-proof deck, instead of being protected by armour of 10 to 8 inches.
6. An upper deck 17 to 20 feet out of water, instead of a low fore-castle and after deck, and a central hurricane deck.
7. Both turrets can fire right ahead and right astern, with one gun each.
8. Much greater bulk out of water and range of stability.

To secure these advantages, the disadvantages to be admitted are—

1. The bases of the turrets are, at the fighting line, only 10 feet out of water, instead of 12 feet as in the "Fury."
2. Should the parts of the ship before and abaft the armour become wholly water-logged, the ship will sink one foot deeper than her normal fighting draft.
3. Two-thirds of the fuel carried by the ship must be stowed at the water-line, outside the battery, and must be surrounded and covered by water when the ship goes into action, to prevent it from taking fire if shell is exploded amongst it.
4. The amount of fuel available for an action will be limited to 400 tons, which will be stowed in the fighting bunkers in the hold and kept ready for use.
5. A larger breadth of ship than is convenient for the docks at Plymouth, and for the dock at Pembroke.

It is possible that both cork and canvas will be used to some extent outside the battery or citadel; but the security of the ship will not be dependent upon them.

This design possesses all the best features of the central citadel plan, and of the shot proof under water deck plan.

It is unnecessary to say that there could be no question as to the sea-going qualities of such a ship, as she possesses all the elements of security against the effects of sea and wind in an unusually high degree.

(signed) N. Barnaby.

Concurred in by Members of Council this day.

5 July 1873. (signed) N. Barnaby.

CORRESPONDENCE between Mr. *E. J. Reed*, M.P. and the Admiralty, in connection with the stability of the "Inflexible."

Mr. *E. J. Reed*, M.P., to Mr. *Barnaby*.

Broadway Chambers, Westminster, S.W.,

My dear Mr. Barnaby,

11 April 1877.

I NEED not say how interested I was in the model yesterday, or how much obliged I am by your kindness in the matter. What I saw did not alter any of the facts as they were present to my mind, nor can I say that my opinions and feelings on the subject underwent any material alteration. I forgot to show you the enclosed tracing, which, from what Mr. Crossland said, will be found, I think, pretty near the truth. I should be glad if you would tell me if it is materially wrong; if not, the fact will then be that this ship, which is made so large and costly to enable her to carry (with large guns) heavy armour defence, has that armour defence so applied, that the mere admission of water into the unarmoured ends (with the cork intact) brings her stability down to the curve B, and that small amount of stability will be diminished by every serious disruption of the cork chambers, and will disappear when they are practically destroyed. With regard to vessels now under construction, and well advanced, I must, of course, be most careful in what I do; but I shall not feel bound, as you may well suppose, to exercise the same care with regard to future vessels, if I know beforehand of what is proposed; and it would be a great relief to my mind to learn that the new ship, for which we shall have to vote money shortly, will not be of this type. For any assurance that you can give me on this point I shall be extremely obliged. As regards vessels in progress, I shall do nothing publicly unless I first consult you.

Yours, &c.

(signed) *E. J. Reed*.

Mr. Reed informed by Mr. Barnaby that the accompanying Memorandum represented his view of the whole matter, and that, if Mr. Reed proposed to take any action, he should be glad to be informed, in order that the attention of the First Lord of the Admiralty should be first called to it.

16 April 1877.

#### MEMORANDUM.

16 April 1877.

1. SOME weeks ago (20th March 1877) Mr. Reed called my attention to a fact, which he was about to make public, that he had made some calculations for a ship approximating to the "Inflexible" in dimensions, form, and arrangements of material, and that inferences drawn from it made him suspect that the "Inflexible," and probably also the "Ajax" and "Agamemnon," did not possess that final reserve of stability, after a severe and protracted engagement, which he considered necessary.

2. He sent me a copy of the results of these calculations, and it was evident on inspecting them, that he was in possession of our own estimate of the position of the centre of gravity of the completed ship\*. It would be easy to say, as the Italians did in reply to his statement about the "Duilio" and the "Dandolo," that he cannot possibly prove any such statements, because no one but the designer and his confidential agents are entitled to have the particulars for making the necessary calculations; and, in the case of a half-built ship, the intentions of the designer, with regard to the disposition of a great mass of material not yet arranged and specified, form part of those particulars. They added, and I might have done so, that Mr. Reed's approximate calculations were inexact. I thought it best to be perfectly frank and open in the matter; and after some correspondence, he accepted my offer to inspect the model representing the ship, as we expected she would be when complete, and to see for himself the final reserve of buoyancy after perforation, as exhibited in an experimental tank at the Admiralty.

3. I gave

\* Since this was written Mr. Reed has stated that neither he nor Mr. Elgar, who was employed by him on the calculations, knew what the Admiralty estimate was.

“INFLEXIBLE.”

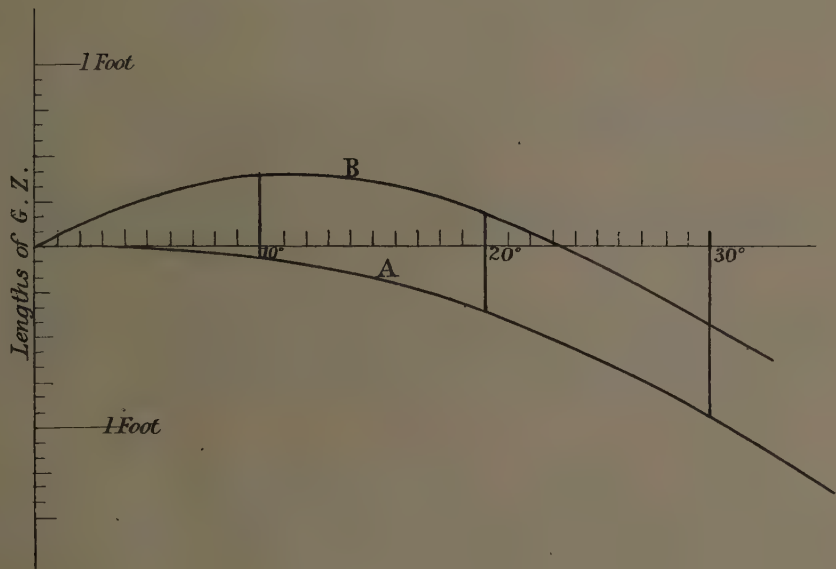
- A . Curve of Stability due  
to Armoured Citadel.

×

Wrong  
N.B.
- B . D° due to Armour,  
Citadel and Cork Belt .

×

Wrong  
N.B.







3. I gave him expressly to understand that there was nothing I desired him to consider as confidential. He was to be at liberty to freely criticise what he saw on the assumption that the model would fairly represent the ship.

4. I must confess that I thought he would have seen that, inasmuch as no possible improvement could have been made in the original design, in the sense desired by him, without either building a larger ship, or leaving the ship in guns and armour considerably inferior to the Italian ships, the features of the design had been wisely balanced. This, however, was not so, as I learn by a letter (herewith) dated 11th instant. Mr. Reed's view is that either the design should comply with his dictum that the completed ship should have stability from her protected structure alone sufficient to meet certain unspecified contingencies of wind and sea, without receiving any benefit whatever from the unarmoured parts of the ship, or, this condition not being satisfied, she is badly designed. The "Warrior" and "Black Prince," designed by Mr. Watts and the Admiralty staff in 1859, do, in fact, comply with this condition and are "citadel ships."

5. When Mr. Reed and I discussed this plan of protection as a means of obtaining a heavily-plated citadel ship with the committee on designs, we all treated it as a novelty, as we all, for the moment, supposed it to be. It was in reality only novel in respect of the great thicknesses of armour proposed. My own excuse for the error is, that the subject was brought to my notice very suddenly, and a great pressure of other work concerning existing ships required by the committee somewhat distracted my attention.

6. The matter was fully considered by the committee on designs, and they did not agree with Mr. Reed's view as to the necessary dependence of the ship upon her armoured citadel for her floating power. They report, in terms with which I fully agree, as follows (*see* Enclosure A).

7. It will be seen from this that the committee did not contemplate the protection even of the requisite *buoyancy* by armour. They were prepared to trust the floating power of the ship to the unarmoured raft constructed in cells and containing buoyant substances. The experiments recommended by the committee were made by us, and it was ascertained that—

(a.) Cork could be usefully employed for excluding water from the spaces actually packed with it, but not from spaces which it simply enclosed or surrounded.

(b.) Other materials could be employed for excluding water from spaces enclosed or surrounded by them though they were perforated by projectiles.

8. Both these devices have been adopted in the design of the "Inflexible," one for cork packing to preserve the solidity of the side walls, water being supposed to flow freely through holes made in them; and the other for coffer-dams for excluding water from the coal spaces notwithstanding perforation.

9. But while we accepted their aids, we did not, as a first step, go so far as the committee indicated, in reducing the extent of the armour, but we made the ship so wide and the citadel so long, that there was armoured buoyancy without any aid from the raft, and sufficient stability, both transverse and longitudinal, when it was completely riddled. We were not prepared to trust to the extreme improbability which we recognised that all our compartments could possibly be riddled in an action, because we saw that although in fighting a ship of her own class the number of projectiles she could receive in her unarmoured ends under the water and in its immediate neighbourhood would not be numerous, yet in a long engagement with many adversaries, numerous light shells might be thrown into her. We, therefore, laid down the proposition that when completely riddled under water and every single compartment thrown open to the sea, the cork walls perforated and the coffer-dams destroyed, she should still be safe and able

to fight. The model illustrates this, and shows that if the ship be built in accordance with the design this will be true; the range of transverse stability will be, on our calculations, under these circumstances,  $30^{\circ}$ ; the maximum amount of stability will be 568 feet  $\times$  11,500 tons = 6,532 foot tons.

10. The "Devastation," as designed by Mr. Reed, and before the superstructure was added, had  $43\frac{1}{2}^{\circ}$  in her uninjured condition, and a maximum stability of 7,430 foot tons. If it should be assumed, as has been done for the "Inflexible," that her unarmoured fore-castle is so injured as to give no stability, then she and the "Inflexible" stand as follows, viz. :—

	"Inflexible" as assumed in Model, unarmoured Ends giving no Stability.	"Devastation," with Fore-castle riddled and giving no Stability.
Maximum stability - - - - -	6,532 foot tons	5,237 foot tons.
Angle of maximum stability - - - - -	$13\frac{1}{2}^{\circ}$	$9^{\circ}$
Range - - - - -	$30^{\circ}$	$34\frac{1}{2}^{\circ}$

11. But when I say that I regard this stability as being sufficient in view of the possible diminution of the stability by slow degrees by the blowing out of the cork walls and internal solid stores, I desire to add that I regard the possibility of the ship ever being reduced to this state as being infinitely remote, although not absolutely impossible. If the water be kept out of the coal spaces by the coffer-dams, as I believe it will be, the ship will retain an amount of stability far in excess of the "Devastation," including her wings added by us. In that case the water will not flow over her decks, as is supposed in the model; these decks will remain as high out of the water as the fore deck of the "Devastation," and we should see no more reason for supposing the sea to wash freely from side to side in those decks than in the "Devastation."

12. The risk of fatal damage by perforation of bow armour is of course got rid of in the "Inflexible," and exists in "Devastation" and all similarly armoured ships.

13. In order to justify Mr. Reed's objection, it is necessary to assume still further that every atom of solid material excluding water in the cellular store-rooms and in the cork walls has been blown out of the ship, and that only the battered iron shell remains, loading down the ship, but giving her no assistance. With regard to that, I say that no heavily armoured ship ever has been designed to comply with such a condition, and that it would be wrong to attempt to do it. That it can be done is obvious, because, as I have already said, the "Warrior," a lightly-armoured ship, is so designed; and it is only necessary to increase the dimensions of the ship in order to magnify to any extent desired the thickness of the armour. It is most improbable that this ever will be done. The Italians, who are fully and keenly alive to all the conditions of the problem, have accepted the view of the Committee on Designs for the "Duilio" and "Dandolo," and trust for both buoyancy and stability to their unarmoured raft. In their later and far larger ships "Italia" and "Lepanto" they have, in full view of Mr. Reed's criticism, gone further still, and surrendered the citadel itself, abandoning side armour entirely. I am not at all confident that the Italians are not in the right, and I have recommended a large experiment to settle that question.

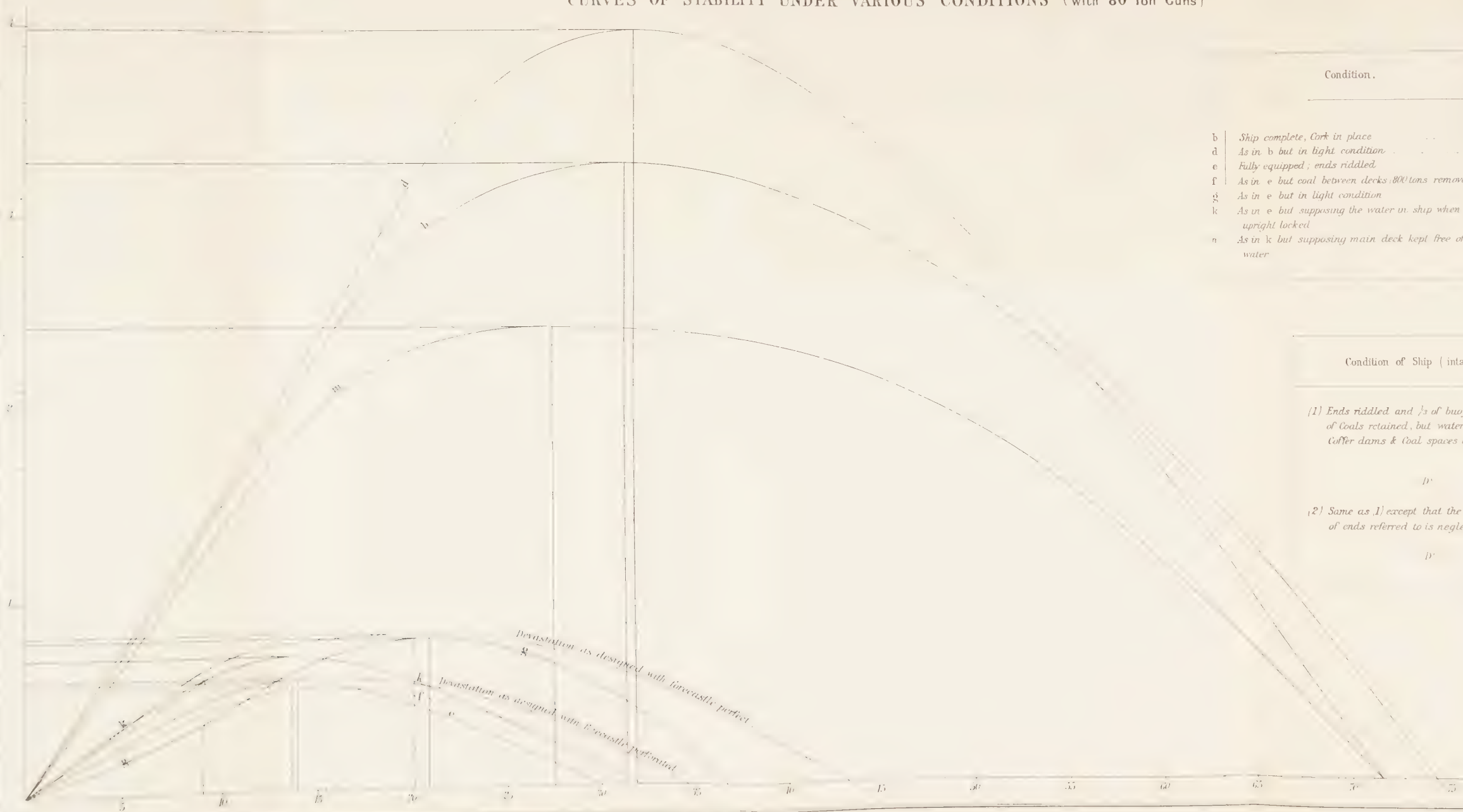
14. If it should turn out that side armour is not necessary for the protection of any of the buoyancy or stability, as the Italians believe, it will not follow that the ships of the "Inflexible" type are wrong. The effect will be to increase the number of guns required for the attack, and therefore to diminish their power, leaving the heavy side armour of the "Inflexible" more nearly impregnable, and making it practically impossible to sink her by the shells of the numerous lighter guns because of the extent of her armoured protection.

15. Some





# “INFLEXIBLE,” CURVES OF STABILITY UNDER VARIOUS CONDITIONS (with 80 Ton Guns)



Condition.	Draught	Displ.	Deck enters water	Angle of Max. Stab.	Max. G. Z.	Range	Metacentre Above C. G.
		Tons			Feet		Feet
b Ship complete, Cork in place	24' 7"	11,500	14"	31.2°	3.28	74.3	6.25
d As in b but in light condition	24' 10"	10,000	18"	31.7°	3.935	71.5	8.53
e Fully equipped; ends riddled	26' 8"	11,500	11"	13.5°	.568	30.0	2.0
f As in e but coal between decks (800 tons removed)	26' 1"	10,700	11 1/2"	15.4°	.534	32.2	3.09
g As in e but in light condition	23' 9"	10,000	15"	20.8°	.794	36.8	2.22
k As in e but supposing the water in ship when upright locked	26' 8 1/2"	12,668	11"	13.9°	.705	32.0	
n As in k but supposing main deck kept free of water	26' 8 1/2"	12,668	11"	13.9°	.705	32.0	

Condition of Ship (intact draught 24' 7")	Draught.	Top of Middle deck above water
	R in	Ft in
(1) Ends riddled and 1/3 of buoyancy of ends clear of Coals retained, but water excluded from coffer dams & coal spaces between decks	25 . 4	1 . 3
	Coals betw <sup>n</sup> decks in	
	Coals betw <sup>n</sup> decks out	
(2) Same as (1) except that the 1/3 of buoyancy of ends referred to is neglected.	25 . 4	
	Coals betw <sup>n</sup> decks in	
	Coals betw <sup>n</sup> decks out	



15. Some of the curves of the stability of the ship are herewith,\* and I have added the curves of stability of the "Devastation" as designed by Mr. Reed, and as accepted by the Committee on Designs as satisfactory.

These curves are—

1st. The ship as designed and perfect.

2nd. With unarmoured forecastle perforated, and regarded as the "Inflexible" is in the model, as giving no stability when perforated.

16. I ought, perhaps, to add that the whole of this discussion turns upon the power of the ship to resist the attacks of artillery, and I have endeavoured to show that a fair balance is maintained between thickness of armour and extent of surface covered by armour. If this is so, we have, at the same cost and on a much lighter draught of water, produced a 14-knot ship with twice the thickness of the armour of the "Fury," as proposed by Mr. Reed in 1869, and with guns of more than twice the weight. But after all, the power of resisting attacks above water is only one element of the defence. We have also to consider the underwater attack. It would be easy, following Mr. Reed's course, to lay down some principle with regard to these attacks, and to say that no ship is well designed which is not so subdivided as to satisfy certain conditions. It would be easy to show by such an unfair method of criticism that few modern ships are well designed, except the "Inflexible," and the "Ajax," and "Agamemnon," and ships as carefully divided as they are.

17. Large ironclad ships, costing nearly as much as the "Inflexible," and not yet complete, might in this way have their reputations seriously damaged.

(signed) *N. Barnaby.*

#### Enclosure (A.)

"26 July 1871.

"EVEN assuming that absolute impenetrability to shot proves to be unattainable, it is still our opinion that the time has not come to throw off armour altogether, but that it is necessary that the first ranks of our ships of war should continue to carry armour of as great resisting power as possible.

"Before quitting this part of our subject, we desire to remark that, although as before pointed out, there are serious difficulties in the way of increasing to any very material extent the thickness of armour applied in the usual manner to sea-going ships, viz., in the form of a complete belt around the ship from stem to stern at the water-line, besides local protection for guns, men, &c., it is not by any means certain that some method may not be devised of securing the requisite reserve of buoyancy by other means than armour-plating. Were this accomplished, the area of the armour might be diminished, and its thickness increased in a corresponding degree.

"The ship would then comprise a very strongly-plated central citadel, surrounded and supported by an unarmoured raft constructed on a cellular system, or containing some buoyant substance such as cork, which, without offering any material resistance to the passage of projectiles, would not be deprived of its buoyancy by penetration.

"In the absence of any practical experience of the effect of large shells or of torpedoes upon

\* MEMORANDUM explanatory of preceding curves. 25 June 1877.

#### "INFLEXIBLE."

THESE curves were made in 1876 to represent the condition of the ship with iron lower masts in, cables stowed above the armour deck, and with no allowance for the buoyancy and stability due to the immersed materials of hull before and abaft the citadel and above the armour deck, except the cork.

With the iron masts removed and cables stowed below, to compensate for the lift in the centre of gravity of the ship, due to increasing the guns from 60 to 80 tons each, and with allowance made for the immersed materials of hull, the curve *e* would have a range of about 35 degrees.

The condition, when all the solid, or water-excluding tanks, stores, cork, &c., before and abaft the citadel, down to about eight feet under water, are assumed to be blown out, and the water-tight compartments in these parts of the ship destroyed, while all the top weights of every kind, including the iron structure, remain in position, but are so damaged as to allow water to move freely from side to side, and in and out of the ship, has been fully investigated. It appears that there will be a range of stability under these practically impossible circumstances, and without any ballast, of about 17 degrees.

(signed) *Nathl. Barnaby.*

upon such a structure as that which we have in view, it is impossible to say with confidence that the object aimed at would be thus attained, but if it were, consequences of so much importance and value would follow, that we think it right to indicate this line of inquiry as worthy of experimental investigation."

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Mr. *E. J. Reed*, M.P., to Mr. *Barnaby*.

• Broadway Chambers, Westminster, S.W.,  
16 May 1877.

Dear Mr. Barnaby,

WITH reference to our unofficial correspondence on the "Inflexible," and other ships of her type, I will confine myself to asking you, officially, to be so good, if you think fit, as to communicate my objection to the Controller and the Board, with any remarks which you may please to make upon it. After what has passed between us, I need hardly say that my objection is confined strictly to the point that whereas you believe the cork chambers with the cork in them would remain more or less intact during a protracted action, I fear and believe that exposed as they are to the full attack of the enemy's shell-fire, they would be speedily and completely destroyed, and in that case the ship's stability would be gone, and she would capsize. I much regret the necessity of expressing this fear and belief; but as they exist in my mind, and I cannot remove them, and as the matter is one of such extreme importance, I think you will see that I cannot do less than state them to you officially, and ask you to bring them to the notice of the Controller and of the Board, with whatever explanations and comment you may please to offer.

I am, &c.  
(signed) *E. J. Reed*.

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Mr. *Barnaby* to the Controller of the Navy.

Controller,

I BEG leave to submit that the enclosed correspondence may be brought to the notice of the First Lord.

It consists of a letter from Mr. Reed to me, dated 11th April last; a reply to him from me, dated the 16th of the same month, enclosing a memorandum; and, finally, a further letter from Mr. Reed, dated the 16th instant.

Mr. Reed's objections would apply to the "Ajax" and "Agamemnon," as well as to the "Inflexible," and therefore also to the proposed new ship named in the Estimates for this year.

I find that Mr. Reed has made no secret of his views, as several eminent public men have communicated to me statements made by Mr. Reed most damaging to the character of the ships in question.

It is very easy to understand the nature of Mr. Reed's objection, and not at all easy to communicate to unskilled persons a knowledge of the real strength of the answer to it.

It is, perhaps, best that I should say for myself and my colleagues that we feel this must be very much a matter of opinion. Mr. Reed takes a view on a technical and difficult question opposed to ours. We say that if we had the "Inflexible" to design over again, we should make no changes in the direction indicated by him. At the same time we must point out that the change in armament from 60-ton to 80-ton guns has made us more dependent upon the integrity of the unarmoured parts of the ship than we were when the ship was first designed.

(signed) *Nathl. Barnaby*.

18 May 1877.

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Mr. E. J. Reed, M.P., to the Controller of the Navy.

Broadway Chambers, Westminster, S.W.,  
18 May 1877.

Sir,

I REGRET the necessity of troubling you with a letter in pursuance of one which I addressed on the 15th instant to Mr. Barnaby; I am obliged to do so because Mr. Barnaby, having favoured me with a perusal of the Memorandum which he proposed to submit in reply to my letter, I feel that it is due to yourself and their Lordships that I should explain, in the briefest manner possible, that, in my opinion, Mr. Barnaby's Memorandum in no way meets the case. I will comment upon it paragraph by paragraph.

1. My objection is not that the "Inflexible" and the other vessels do not possess "that final reserve of stability after a severe and protracted engagement which I consider necessary," but that *the cork chambers will be liable in action to speedy destruction*, and that the ship will then be left without stability.

2. Mr. Barnaby could not possibly contend at the same time, as he seems to imply, both that I am in possession of the official estimate of the position of the centre of gravity, and that I am without the necessary information on that point. Suffice it to say, that the exactness of my calculations *are* admitted by Mr. Barnaby. They were, however, made in my own office, and not in any sense or degree derived from the Admiralty.

3. As the model had the cork in (or wood, which corresponded to the cork), it threw no light whatever upon my objection, which is entirely based upon the facility with which the cork chambers might be destroyed.

4. I cannot admit Mr. Barnaby's proposition that no improvement could have been made in the original design in the sense desired by me without either building a larger ship or leaving the ship in guns and armour inferior to the Italian ships. On the contrary, I believe a perfectly safe ship, with equal protection, might have been designed on the dimensions of the "Inflexible." But that is not the question I wish to raise, but simply the dangerous character of the "Inflexible" as designed. I do not wish any dictum of mine to be complied with; I simply feel it my duty to offer a formal objection to the construction of ships designed as the "Inflexible" is.

The "Inflexible" being so designed that she will not float upright in action without the assistance of cork chambers, I have no longer the slightest desire to claim any association with the design. I freely admit that one of the fundamental conditions of the design as proposed by me to the Admiralty Committee on Designs was, that the ship should be capable of floating in an upright position, notwithstanding any amount of injury to the unarmoured ends.

6. The Committee expressed no disagreement whatever with my view, nor does the extract from their Report, which Mr. Barnaby appends to his Memorandum, convey anything of the kind. If carefully read, their remarks bear an opposite construction.

7. The only information which has been made public respecting the use of cork in enclosed chambers as a means of safety for ships tends, in my opinion, to confirm my fears that when exposed to heavy shell-fire it will speedily disappear.

8. If it were possible for me to believe that the devices adopted in the "Inflexible" would prove efficient, I should still feel that so grave an innovation in the design of first-class iron-clad ships as that of hanging their existence upon such devices should only have been made after a full and complete announcement that the ships to be built were no longer like previous ships, vitally protected by their armour, but were dependent for their safety upon those devices.

9. It may be true, and I believe it is, that the ship has stability when the cork chambers are "riddled," but that has nothing to do with my objection, which is, that she is without stability when the cork is blown out of the chambers by shells, a result which I fear might very early occur in action. Wherever a shell bursts

"riddling" will not be the result, but complete destruction of the surrounding chambers.

10. The figures given in this paragraph represent, in the case of the "Inflexible," the state of the ship when the cork is in all the chambers. I do not understand how figures representing this state of things can have received the heading "'Inflexible,' as assumed in model unarmoured ends *giving no stability*." It is obvious that these figures with this heading go to the very essence of the question.

11. I dissent from the whole of this paragraph. That which Mr. Barnaby regards as a remote possibility I regard as likely to occur very early in an action.

12. My objection is entirely based upon the fact that the "Inflexible" can be destroyed without her armour being either penetrated or touched. I cannot understand how this question can be met by an intimation that the "Devastation" and other ships may be destroyed by the *piercing* of their armour.

13. I dissent from the first sentence of this paragraph; as to the second, I beg leave to state that every heavily-armoured ship which I am acquainted with has been designed to comply with the condition that I am contending for, with the exception of the ships under notice, and of the Italian ships "Duilio" and "Dandolo," which are exposed, in my opinion, beyond all doubt or question, to speedy destruction. I fear I can only express my apprehension that the Italians are pursuing a totally wrong course, and one which is likely to result in disaster.

14. Needs no remark from me.

15. On this paragraph and the diagrams accompanying it, I have simply to state that the curves of the "Inflexible's" stability given thereon all assume the cork to be in the chambers, and therefore none of them has anything to do with my objection. I am obliged again to take exception to the statement that the model shows the "Inflexible" with the unarmoured ends giving no stability. This statement can only be true when the case of all the cork being out of the chambers is considered; and, in that case, there is no stability to represent in a curve.

16 and 17. I will not trouble you with any remarks upon these paragraphs, except by saying, that any desire to unfairly criticise the "Inflexible," or, indeed, any desire to criticise her at all, is as far as possible from my thoughts. To take the one great and serious exception to her design, which I do take, is to me the occasion of no little pain and distress of mind; but I cannot on that account, nor on any other, neglect what I feel to be the duty of inviting the reconsideration of the Admiralty to a matter which I consider to be fraught with great danger in the future. It will be for yourself and their Lordships to say whether the matter is or is not worthy of reconsideration, and whether I have or have not done wrong in calling official attention to the matter on finding, and only on finding, that my unofficial communications to Mr. Barnaby had no useful result. The question at issue is almost entirely a matter of opinion, and one upon which I do not in the least degree wish to set up my judgment as superior to that of Mr. Barnaby; and I trust the question may be regarded solely as one to be decided upon the grounds of what is or is not likely to occur in a naval action under shell-fire.

I am, &c.  
(signed) E. J. Reed.

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Mr. Barnaby to the Controller of the Navy.

Controller,

19 May 1877.

I HAVE nothing to add to the Memorandum forwarded to you, and to which this is a reply.

Mr. Reed does not say how he would propose to remedy what he considers a defect in this class of ship; as he has such a detailed account of the ship that he has been able to estimate the position of the centre of gravity, he must be



be able to indicate those modifications which in his view would make a better ship.

If he will do this, I shall be prepared to submit to be judged by the comparison; until he does, we are fighting a shadow. The only limitation to be given him should be, that he does not exceed the displacement of the "Inflexible," nor reduce her speed, estimated at 14 knots at the measured mile.

I need hardly call attention to the singular nature of the engagement to which Mr. Reed subjects the "Inflexible" in his argument.

There are to be no torpedoes, no rams, no guns capable of piercing her turret armour, or her sides; she is to be struck by many shells, exploding at and below the water-line, in her unarmoured ends.

I would record here that the first intimation I had from Mr. Reed that he was dissatisfied with the ship was on the evening preceding the day when he was to read a Paper at the last session of Naval Architects. He then informed me that he had designed very carefully an approximate "Inflexible," and proposed to describe her publicly the next day, and say that if the "Inflexible" were like her, she would capsize in action.

Only a few days before, he was vigorously contending that she was of a novel type proposed by himself.

(signed) N. Barnaby.

The Director of Naval Ordnance to the Controller of the Navy.

Controller,

LOOKING at this as a question of naval artillery, I cannot conceive that the conditions on which Mr. Reed bases his argument as to the safety of the ship can be brought about in a naval engagement.

These conditions are, practically, that the fore and after ends of the ship are to be utterly demolished.

Should the "Inflexible" be made a target for continued practice, or be placed in a position similar to a fort, whose walls could be breached by a battery of fixed guns, it is possible that in time the unarmoured parts above water might be destroyed; but I do not think, for the following reasons, it is possible in a naval engagement to commit the havoc below the water that is presupposed by Mr. Reed:—

1. The difficulty of striking a ship at or below the water-line, particularly one of the "Inflexible" type, that will scarcely ever roll.

2. The projectiles that would be fired at the "Inflexible" would certainly be armour-piercing, either chilled iron or steel; and such shell would not burst in passing through the thin iron sides of the ship, as they require the resistance of armour to ignite the bursting charge.

3. Considering the few guns that are likely to be carried by any ship engaging the "Inflexible," and the ever-varying distance and bearing that must exist in any future naval action, it is next to impossible that any number of shells could be planted in a ship in such an exact position (even supposing them to burst) as to "blow out the cork" from the chambers in which it will be fixed.

Those in charge of the ship must be entirely devoid of all resources if, during the intervals of an engagement, for intervals there must be, they could not take some steps, by the employment of stopper-mats, or shot-plugs, &c., to prevent the unarmoured ends of the ship from being water-logged, or, supposing the water to come in, to allow it to run into the bilge, to be pumped out by the engines.

The first real naval engagement will settle many points in regard to armour-clad vessels of the present day that are now simply matters of opinion.

Naval fighting cannot be undertaken without risk; but I do not consider there will be risk to the "Inflexible" from the result Mr. Reed apprehends will occur "very early in action," as I do not believe it can occur.

If the ship should get a list from water finding its way into the divisions at either end above the armoured deck, it appears to me there are simple means at hand that can be resorted to for balancing her in an upright position.

I have no hesitation in saying I do not share, for one moment, Mr. Reed's

anxiety for the safety of the "Inflexible" in action, from the effect of artillery-fire, as expressed by him.

22 May 1877.

(signed) *Henry Boys.*

"INFLEXIBLE."

In submitting to their Lordships the enclosed letter from Mr. E. J. Reed on the subject of the stability of the "Inflexible" under certain conditions in which he has assumed that the ship might be placed, I would observe that the statement that the "Inflexible" is so designed that she will not float upright in action without the assistance of cork chambers is opposed to the obvious facts of the case. After the most careful study of his letter to me, and all the correspondence with the Director of Naval Construction, I cannot find anything which has not been fully anticipated and considered by all of us who are responsible since the design was first undertaken, and during the four years the ship has been under construction.

The result which has been assumed in this letter could, in my opinion, only be arrived at if we can suppose the ship lying perfectly helpless and immovable, and allowing herself to be attacked by an indefinite number of guns. By this means it is possible that a large portion of the unarmoured structure above the water might be destroyed, but even then I fail to see how it is possible to destroy or remove entirely all material, timber, cork, stores, coal, or other articles which, while remaining in any portion of the structure, must exclude water or prevent water taking their place.

To assume this ship placed in such a position, is, to my mind, representing an exaggerated state of circumstances which could never occur in real warfare.

Place any other ironclads defended with what is now very weak armour at the extremities in this assumed position, and where would these ships be after a course of such treatment as we are asked to consider likely to occur during an action to the "Inflexible?" because it must be remembered that while we talk of protection from armour we must discard armour of less than a certain thickness. For example, in recent ironclads of large size built in England for foreign governments from the designs of Mr. Reed, the thickness of armour protecting vital parts is penetrable by guns of 12 tons. In the "Indipendenza," a ship of 9,000 tons displacement, the engines are protected by not more than nine inches of armour, which is easily penetrable by the 12-ton gun. In the "Kaiser" and "Deutschland" the powder magazines and engines are protected by not more than the eight inches of armour, which is perforable by the 9-ton gun. A few well-delivered rounds from these guns, or even much larger guns, could have but small effect on the unarmoured ends of the "Inflexible," whereas they would be fatal to the existence of the above, and most other ironclads of their type. In 1871 Mr. Reed wrote to the Admiralty, and said, of the ships of the "Minotaur" class, which he had not designed:—

"I venture to recommend that the fitness of these vessels to withstand  
"all the strains to which they may possibly be exposed at sea be enquired  
"into without delay, and before they are again sent to sea, as the breaking  
"in two of any such ships would probably result in her immediate and  
"total loss."

This question was investigated by the present Constructors of the Navy, and it was found that while Mr. Reed had calculated the strains to which, under certain assumed conditions, the ship might be exposed, he had not ascertained the power of resistance which they possessed to meet the strains. This was found to be ample, and the Constructors took the responsibility of recommending that the three ships should remain where they were at the time the scare was raised, in commission and at sea. Mr. Reed was not then in Parliament, or he might have brought the danger to which these ships were exposed before the House of Commons, but he made it the subject of a statement in public as well as an official letter to the Admiralty. I must observe that while himself the responsible head of the constructive department of the Navy, Mr. Reed raised no objection to the continual and constant employment of these ships at sea. In my opinion the alarm he seeks to raise as to the possible condition of the  
"Inflexible"



"Inflexible" is equally groundless, being based upon his assumed estimate of what the ship may have to resist, without rightly appreciating her power of resisting it.

(signed) *Wm. Houston Stewart.*

22 May 1877.

(S. 5672—6504.)

The Secretary to the Admiralty to Mr. *E. J. Reed*, M.P.

(Confidential).

Sir,

5 June 1877.

WITH reference to former correspondence and to your letter of the 18th ultimo, I am commanded by my Lords Commissioners of the Admiralty to acquaint you that the points raised by you as to the design of the "Inflexible" have been fully considered by their Lordships.

2. In your letter to the Controller, dated 18th ultimo, you trusted that the question might be "regarded solely as one to be decided upon the grounds of what is or is not likely to occur in a naval action under shell-fire."

3. This subject has been fully investigated by the naval members of the Board of Admiralty, and the Director of Naval Ordnance, who are unanimously of opinion that the effects anticipated by you could not occur under the conditions of a naval action.

4. Upon these grounds my Lords differ from the views expressed by you, and consider the "Inflexible" to be a safe and most formidable fighting vessel.

5. Moreover, you appear to have overlooked certain facts in connection with the condition of the ship under the circumstances supposed by you, which if taken into consideration would remove all apprehension of there being any risk that she would turn over.

*E. J. Reed*, Esq., C.B., M.P.,  
&c. &c. &c.

Broadway Chambers, Westminster, S.W.

I am, &c.  
(signed) *Robert Hall.*

Mr. *E. J. Reed*, M.P., to the Secretary to the Admiralty.

Broadway Chambers, Westminster,  
London, S.W., 9 June 1877.

Sir,

I HAVE the honour to acknowledge the receipt of your favour of the 5th instant, stating that the points raised by me as to the design of the "Inflexible" have been fully considered by their Lordships, and that the naval members of the Board of Admiralty, and the Director of Naval Ordnance are unanimously of opinion that "the effects anticipated by me" (viz., the speedy and general destruction by shell-fire of the thin iron chambers filled with cork in the unarmoured ends) "would not occur under the condition of a naval action."

I at once admit that the unanimous expression of that opinion by four very able and experienced naval officers, in responsible positions, is of great weight, and that I could not expect that my contrary opinion, however pronounced or urged, would be sufficient to deter their Lordships from adopting the view of such advisers; and I admit also that in a matter of opinion (as this, for want of experiments, is), I should feel myself bound to defer to them, and to modify my view if I could. I regret, however, to state that, after full reconsideration, my conviction remains unaltered. Having only my own strong conviction to rest

on, however, I do not feel bound to further press the matter upon their Lordships by extending this correspondence; it would not be either modest or respectful to do so; but I should like to explain to their Lordships a view of the matter which presses strongly upon my mind.

One of two things appears certain, the armoured citadel either is or is not *nearly sufficient* to furnish the requisite stability against capsizing; if it be nearly sufficient, why not extend it a little more, and by this simple means effectually guard the ship against that worst and cruellest mode of destruction, viz., capsizing. If it be *not* nearly sufficient, then the safety of the ship must depend upon a large extent of these cork cells remaining intact under heavy shell-fire, and I know of no grounds for believing they would do so. I must, however, here leave the matter, and content myself with having stated my settled conviction upon it.

I would add, with reference to the last paragraph of your letter, to avoid misunderstanding, that I have based my action in this matter upon very full and careful investigations, allowing everything I could to the ship, and that I have been very particular not to overlook any facts which tend to give security to the ship; on the other hand I have, hitherto, refrained from mentioning the whole extent of my apprehensions, for, in truth, I fear that even with a considerable portion of the cork chambers intact, the "Inflexible" would nevertheless be seriously deficient in stability.

It appeared to me to be my strict duty to express my main apprehension as soon as I had discovered the grounds of it (which had never been publicly made known); having done this, I now leave the matter in the hands of their Lordships. I must, of course, reserve to myself the liberty of considering what steps it may be my duty to take in Parliament with reference to the new ship of this type, for the building of which authority is asked in the Navy Estimates for this year. Neither in that matter nor in any other, however, shall I take any step that is not heavily pressed upon me by a sense of duty in a matter of so much gravity, nor shall I lose sight of the fact that to say or do more in the matter than a strict sense of duty dictates, would be to unfairly embarrass the Admiralty and its officers in the execution of their great and responsible tasks.

The Secretary to the Admiralty.

I have, &c.  
(signed) E. J. Reed.

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"INFLEXIBLE."

12 June 1877.

THEIR Lordships will not desire, probably, to send any answer to this letter.

If they should, I shall be ready to submit a statement for their consideration.

I content myself now with remarking that it should not be supposed that Mr. Reed's hints, that he knows more than he has revealed, have any foundation.

The whole question relates to an estimate of six inches, one way or the other, in the position of the centre of gravity of the completed ship, and if I had not confirmed his assumption as to where it was likely to be, his criticism would be pointless.

I had nothing to conceal in the matter, and I gave him the weapon he is now using. I know, therefore, its exact value; and I say that he not only has not scrupled to use it to the full extent of his power, but also that he has used it unfairly.

In proof of this, I refer to his curve of stability drawn on the assumption he made, and I accepted, as to the position of the centre of gravity, and I say that it is wrong, and that if it had been rightly constructed, he would have seen why



why the model still has stability in the conditions assumed by him, and why the ship should have also.

Mr. Reed looks at the ship from one point of view only, and imagines a condition of things, *i.e.*, a lengthened citadel, tending to greater endurance of the ship under certain supposed conditions.

It must be well known to their Lordships that the constructors have had to defend many of the designs for which Mr. Reed was responsible, against the advocates of partial views.

Some of the ships, as "Monarch" and "Sultan," were held to be unsafe from deficient stability; the "Devastation" from deficiency in freeboard, and from lowness of belt-armour forward.

The ships of the "Vanguard" class were discredited, from the fact that their inner bottoms stopped below the water-line. Many of the ships are said to be weak in the bottom plating, and others are held to be defended by very weak armour at the extremities. There are those who contend that the rams are constructed in such an insecure manner that they would be twisted out in ramming, and there are many against whom it has been necessary to defend the size and cost of ships, in view of the torpedo, a weapon of which the terrible power was fully demonstrated in the American War of 1862.

Some of Her Majesty's ships have had to be defended from the partial views of Mr. Reed himself, as in the case of the "Minotaur" class, and their alleged dangerous weakness, and the "Devastation," in regard to the form of her superstructure.

Mr. Reed's view is not only partial; it is unwise.

It is unwise, because lengthening the armoured structure, and therefore thinning the armour, in order to get more stability protected by armour, is to sacrifice the greater for the less; is to sacrifice the vital for that which is not vital.

A single shell sent through the armour may disable the ship, but no single shell in the unarmoured structure could possibly do so.

I would also remark that some of the statements are misleading.

If the unarmoured ends of the ship were completely swept away, the stability protected by armour would give her a range of nearly 50 degrees.

Or, if the outer skin of the ship in the unarmoured parts were permeable to the sea through its whole extent, and the cork were removed altogether, the ship would still have a large range of stability.

(signed) *N. Barnaby.*

(S. 7209—77.)

#### HER MAJESTY'S SHIP "INFLEXIBLE."

My Lords have had under consideration the statement respecting this ship, made by the honourable Member for Pembroke in the House of Commons on the 18th June, as well as his letter to the Controller of the Navy of the 18th May, and are desirous of recording their opinion upon the questions raised.

Mr. Reed contends that with the unprotected ends of the "Inflexible" completely riddled and the whole of the cork, &c. in those ends blown out of the ship by shell-fire (an eventuality which he fears might occur very early in an action), the ship would have no stability, and would capsize. Having examined the model of the "Inflexible," which has been constructed to represent the ship as she would be with all weight on board; and having carefully noted the effect produced, 1st, with both unprotected ends riddled and water-logged, but with the cork, &c. intact; 2nd, under similar conditions, but with part of the cork, &c. removed; and 3rd, with both ends riddled, water-logged, and the whole of the cork, &c. removed, my Lords are of opinion that, in the 1st case, an ample reserve of stability is left; in the 2nd a fair amount remains, and in the last case (which is what Mr. Reed contemplates), the model remains upright, and does not capsize, although the remaining amount of stability is small.

Mr. Reed has not, however, taken into consideration this fact, that even supposing the unprotected ends riddled, water-logged, and the whole of the cork, &c. blown out of the ends, there yet remains the remedy of admitting 400 tons of water-ballast into the double bottom of the armoured citadel, which would at once have the effect of increasing the stability.

With regard to Mr. Reed's apprehensions of the whole of the cork, &c. being blown out early in an action, and the unprotected ends entirely riddled, my Lords cannot conceive the possibility of such a result under any conditions of an action between the "Inflexible" and any other ship, or even if she were engaged with fortifications for a lengthened period. My Lords cannot imagine it to be possible that the large mass of densely-packed cork, stores, &c., enclosed in iron compartments could be blown out of the ends in the manner he suggests by any amount of hits by shell in the most protracted engagement; and taking into consideration the inaccuracy of fire on vessels moving at high speed, and the enormous power of the armament of the "Inflexible," my Lords cannot contemplate that in even two or three engagements there would be a possibility of the whole of the compartments in the unprotected ends of the ship being so riddled as to cause them to become water-logged, much less the whole of the cork blown out.

With the armoured citadel intact, my Lords consider the "Inflexible" to be a safe and most formidable fighting ship.

Admiralty, Whitehall,  
Board Minute, 23 June 1877.

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COPIES of the OFFICIAL Documents relating to  
Design of H.M.S. "INFLEXIBLE"; and, of the  
RESPONDENCE between Mr. *E. J. Reed*, M.P.  
the Admiralty in connection with the Stability  
this Ship.

(*Mr. Algernon Egerton.*)

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*Ordered, by The House of Commons, to be Printed,*  
*28 June 1877.*

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[*Price 2 s.*]



NAVY (INSTRUCTIONS TO THE "INFLEXIBLE" COMMITTEE).

655

RETURN to an Order of the Honourable The House of Commons,  
dated 9 August 1877 ;—for,

COPY " of the INSTRUCTIONS sent to the COMMITTEE appointed by the  
ADMIRALTY to inquire into the Stability, &c. of H.M.S. 'INFLEXIBLE.' "

Admiralty,  
9 August 1877. }

T. JAMES,  
Pro Chief Clerk.

COPY of the INSTRUCTIONS to the "INFLEXIBLE" COMMITTEE.

Sir,

Admiralty, 16th July 1877.

I AM commanded by my Lords Commissioners of the Admiralty to acquaint you that they have appointed you President of a Committee to examine as to the stability, &c., of the "Inflexible," composed of the following gentlemen, viz. :—

Dr. J. Woolley.  
Mr. G. W. Rendel, C.E.  
Mr. W. Froude, F.R.S.

2. The letters of Mr. E. J. Reed, M.P., to the Director of Naval Construction of the 11th April and 16th May 1877, and his letters of the 18th May to the Controller of the Navy, and of the 9th June to the Secretary of the Admiralty, are referred to the Committee (*see* printed Parliamentary Paper herewith), and the Committee will also be furnished with all the drawings and official papers in connection with the design of the ship.

3. My Lords are desirous that the Committee should report their opinion on the following points :—

(1.) As to the possibility or probability of the occurrence of the contingencies contemplated by Mr. Reed as being likely to happen very early in an engagement, namely, the complete penetration and water-logging of the unprotected ends of the ship, and the blowing out of the whole of the stores and cork by the action of shell fire.

(2.) As to whether there would be any risk of the ship capsizing if she were placed under the conditions mentioned in the previous paragraph. Supposing that the water ballast, for which provision has been made, were admitted into the double bottom of the armoured citadel ; or, whether she would retain a sufficient amount of stability to enable such temporary repairs to be executed as would enable her to reach a port.

(3.) Whether, all points considered, the ship is, so far as can be ascertained from the design and calculations, a safe sea-going vessel, and whether, when the amount of damage to which her unprotected ends would be exposed in action is borne in mind, sufficient provision has been made to ensure in all human probability her safety under such conditions.

4. The members of the Committee have been requested to place themselves in communication with you.

Admiral Sir James Hope, G.C.B.,  
&c.      &c.      &c.

I am, &c.  
(signed) Robert Hall.

NAVY (INSTRUCTIONS TO THE  
"INFLEXIBLE" COMMITTEE).

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COPY of the INSTRUCTIONS sent to the COMMITTEE  
appointed by the ADMIRALTY to inquire into  
the Stability, &c., of H.M.S. "Inflexible."

(*Mr. Algernon Egerton.*)

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*Ordered, by The House of Commons, to be Printed,  
9 August 1877.*

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## NAVY (IRON ARMOUR).

657

RETURN to an Address of the Honourable The House of Commons,  
dated 17 May 1877;—for,

“COPIES of a LETTER from the late MEMBERS of the IRON PLATE COMMITTEE to the CHAIRMAN of the ROYAL COMMISSION on SCIENTIFIC EDUCATION:”

“Of a LETTER from the CHAIRMAN addressed to the HOME SECRETARY in regard thereto:”

“And, of a LETTER from Captain *Douglas Galton* to the CHAIRMAN.”

Home Office, }  
17 May 1877. }

HENRY SELWIN IBBETSON.

LETTER from the Chairman of the Royal Commission on Scientific Education  
to the Home Secretary.

Devonshire House, Piccadilly,  
5 May 1877.

Sir,

THE accompanying letter animadverting on a passage in the Eighth Report of the Commission on Scientific Education, has been addressed to me as Chairman of that Commission by the undersigned members of the Iron Armour-Plate Committee. In forwarding this letter to you at their request, I am desirous at the same time to make a few remarks on some of the statements contained in it.

The Committee complain that a passage from Captain Galton's evidence was quoted in the Report, in support of the opinion of the Commission as to the inefficiency of the present organisation for scientific inquiries. The Commissioners naturally placed entire confidence in the evidence of a gentleman who had been connected with the scientific department of the War Office, and who, it was reasonable to presume, was fully acquainted with the instructions given to the Iron Armour-Plate Committee and with their proceedings. They would not have felt justified in withholding that evidence from the public, but they gladly express their regret if in taking this course they have involuntarily done injustice to the members of the Committee by giving so much prominence to a statement of which the accuracy is now questioned.

The Committee proceed to state that the Commissioners “volunteer an opinion of their own evidently referring to their case.” This is an assumption which they are not entitled to make. The passage from the Report quoted in support of it has no such express reference to their case. It applies equally to evidence of the same nature and relating to similar subjects given by other witnesses, and not the slightest alteration in the passage would have been required if the quotation from Captain Galton's evidence had been altogether omitted. Moreover, the words quoted by the Committee are clearly governed by the words “are stated by the witnesses” which occur in the preceding line, and consequently the assertions made by the Committee that the Commission vouch for Captain Galton's evidence as correct, and deliberately and formally assert that the Iron Armour-Plate Committee were incompetent to execute the responsible duties entrusted to them, are assertions which nothing in the Report justifies them in making.

In a subsequent part of their letter, the Committee have drawn up a comparison between what they describe as the statements of the Science Commission and the official instructions to the Iron Armour Committee. These statements are so described most incorrectly. They are, in fact, statements collected from



Captain Galton's evidence, and as those among them which refer more expressly to the Iron Armour-Plate Committee were not even quoted by the Commissioners, they cannot on any conceivable principle be justly held responsible for them.

Right Honourable R. A. Cross.

I have, &c.  
(signed) *Devonshire.*

LETTER from the late Members of the Iron Plate Committee to the Chairman of the Royal Commission on Scientific Education.

The Royal Commission on Scientific Education and the Iron Armour-Plate Committee.

My Lord Duke,

London, 22 March 1877.

WE, the undersigned, who were Members of the Committee appointed by the Government in 1861, to inquire into the application of iron for defensive purposes in warfare, desire to call your Grace's attention to certain statements made in the Reports of the Royal Commission on Scientific Instruction, of which your Grace was Chairman.

In the evidence given before the Commission by Captain Galton, we find the following passages:—

12966. I think that, as a rule, our statesmen do not appreciate properly the value of scientific advice or of scientific inquiry, and that they are very much fonder of experiments made upon a large scale with no definite system, than they are of experiments which have been brought out as the result of a carefully studied previous inquiry.

I think that an enormous amount of money was wasted in the case of the inquiry into armour plates, both for ships and forts.

In that case the Government appointed a partly scientific committee, but it was mixed up with other persons who were not scientific; and instead of commencing a series of experiments upon a small and clearly defined scale, from which they could have drawn conclusions for making their larger experiments, they began by firing at any plates that were offered to them, which had no relation one to another, either in the relations to the guns or to the form of backing, or in any other way; and, consequently, it was difficult to draw useful calculations from them.

There was an enormous amount of money spent upon those experiments, which, if a proper scheme had been drawn out and followed, would have been expended far more usefully; but the reason of that was the want of scientific appreciation in the persons at the head of the Government, who begged the Committee at once to make great experiments instead of proceeding systematically with small ones to begin with.

12968. *Dr. Sharpey.*] That question which you referred to about armour plating was a question which required to be solved by scientific experiments, was it not?—Yes.

12969. And the heads of the administrative department, to whom it fell to make those inquiries in that case, were not merely applying as an executive body known principles, they required really to find out fresh scientific evidence?—Yes.

12970. In such a case, do not you think that if there had been a scientific advising council, the department could have referred the question to the council in the first instance, who would have advised such a course of experiments as you yourself would have pointed out; in the first instance, that there should have been experiments on a moderate scale with a given object, and in a certain order, with a certain correlation of one another, before they began those very expensive trials on a large scale, and that expense might have been thus saved?—I have no doubt that if they had referred it to a scientific committee in the first place, the committee would have probably advised the course which I was referring to; but what the War Office did do was to appoint a special committee for the purpose.

12971. *Chairman.*] Did they follow the advice of the committee?—They left the whole of the devising of the experiments to them, except that they told them that they wanted some big experiments.

12972. *Dr. Sharpey.*] Was it not rather a professional committee than a scientific committee?—There were upon it Dr. Percy, Mr. Pole, Sir William Fairbairn, and there were naval and military officers besides.

12973. Of course large expense was incurred to the nation in making what one might almost call random experiments?—Yes, an enormous expense. A great part of that sum of money might have been spent infinitely more advantageously had there been a well-considered plan originally.

If these statements had merely appeared in the minutes of evidence, it would have been of little consequence what opinions a single witness might choose to express



express on a matter respecting which (as will be seen hereafter) he was so singularly ill-informed.

But, unfortunately, the Royal Commission have given Captain Galton's statements an importance that would otherwise not have attached to them.

We find that in the eighth Report, page 3, these statements are prominently quoted in support of the opinion of the Commission, as to the "inefficiency of the present organisation" for scientific inquiries; and in the "Remarks" at page 45, the Commission volunteer an opinion of their own, evidently referring to our case, in the following terms:

In other cases, investigations are conducted in such a manner as to involve a needless outlay of time and money, because they were planned without consultation with competent men of science.

This is given as one of the cogent grounds for the recommendation of the Commission, that an official paid scientific staff is a necessity of the public service.

Here, therefore, we find your Grace's Commission not only vouching for Captain Galton's statements as correct, but deliberately and formally asserting to Her Majesty, on their own authority, and as a fact of much public import, that the Iron Armour Committee were incompetent to execute properly and scientifically the responsible duties entrusted to them, thereby causing a large and needless waste of public money.

This, my Lord Duke, is a grave matter, and we must ask your Grace's attention to the facts of the case.

The Special Committee on Iron for Defensive Purposes was appointed by Mr. Secretary (afterwards Lord) Herbert, in January 1861, and it consisted of the following members:

Vice Admiral the Right Honourable Sir John Dalrymple Hay, bart., R.N.,  
M.P., F.R.S., D.C.L.

Major General Sir William Jervis, R.E., K.C.B.

Major General William Henderson, R.A.

Sir William Fairbairn, bart., F.R.S., LL.D. (deceased).

Dr. John Percy, F.R.S.

Dr. William Pole, F.R.S., Member of the Council of the Institution of Civil Engineers.

The Committee were in active work till the middle of 1864; they reported frequently and fully their proceedings to the Government, and their reports were printed in four folio volumes. These documents were withheld from publication for reasons of public policy, but they were perfectly accessible in Government offices, and there is no excuse for ignorance of their contents, on the part either of Captain Galton or the members of your Grace's Commission.

It is from these documents that we shall draw our reply to the charges made against us.

The statements made have reference—

I.—To the Instructions given by the Government to our Committee.

II.—To the actual Proceedings of the Committee in their earlier Stages.

III.—To the conduct of the Proceedings of the Committee generally.

We will take these seriatim.

*I.—As to the Instructions given by the Government to our Committee.*

On this point there can be no mistake, as the instructions were given in a formal document issued from the War Office and approved by the Admiralty, and which is printed in the first page of our proceedings. We will reprint this at full length, and put alongside of the statements of the Science Commission,

to which it gives the most direct and positive contradiction. The italics are ours.

*Statements of the Science Commission.*

Our statesmen are very much fonder of experiments made upon a large scale, *with no defined system*, than they are of experiments which have been brought out (?) as the result of carefully-studied previous inquiries.

The persons at the head of the Government begged the Iron Armour Committee *at once to make great experiments, instead of proceeding systematically with small ones to begin with.*

The War Office left the whole of the devising of the experiments to the Committee, *except that they told them that they wanted some big experiments.*

*Official Instructions to the Iron Armour Committee.*

War Office, 12 January 1861.

The experiments should be directed to ascertain the thickness, size, and weight of iron plates of a specified composition and manufacture, that will resist shot of given shape, weight, and material, at given velocities, striking both directly and at given angles.

The resisting powers of different qualities of iron plates must be tested; hence the history of each plate should be ascertained, following it up from the first stage of manufacture, until it became a wrought-iron plate.

The chemical composition of the iron at each process of manufacture should be ascertained, the specific gravity and lay of

the fibre of the plates experimented on should be noted, as well as the composition, density, and mode of manufacture of the shot; but it will be impossible to decide on the greater or less resistance of the plates, unless the velocities of the shot be measured either by Professor Wheatstone's, or one of the foreign instruments. Any variation in the velocity of the shot should be carefully recorded, together with every particular of each experiment. If this be not done, no accurate conclusions can be drawn from them.

The Committee should *begin the experiments on a small scale*, for if all the facts above mentioned be carefully ascertained and *traced up through certain gradations* of models at the known high velocities required, they would, at a very reduced cost in money and time, afford data for devising a few final experiments on a larger scale, because all the particulars of the plates in the small experiments being known, allowance could be made for the difference in the composition of iron plates on the larger scale, which necessarily arises from the imperfection of means of manufacture, and the law being the same whether for large or small plates, that being once ascertained, the Committee would know what practical experiments to make on a large scale.

All the records of all previous experiments that have been made, should be given to the Committee to be examined and classified. The Committee should also be called upon to submit a scheme of experiments.

The experiments should be carried on at Woolwich, Shoeburyness, or Portsmouth, or, if preferred, in the neighbourhood of some ironworks, as might be best for the convenience of the gentlemen engaged.

The Government would, by means of these experiments, be in a position to specify the proper mode of manufacture for these plates.

(signed) B. Hawes.

This comparison of statements needs no comment.

## II.—As to the actual Proceedings of the Special Committee on Iron in their early Stages.

Here again we cannot better test the truth of the statements of your Grace's Commission than by putting them side by side with the statements of fact as recorded in our printed Reports.

*Statements of the Science Commission.*

Instead of commencing a series of experiments upon a *small and clearly defined scale*, from which the Committee could have drawn conclusions for making their larger experiments, *they began by firing at any plates that were offered to them, which had no relation one to another.*

In the first instance, there should have been experiments on a *moderate scale, with a given object, and in a certain order*, with a certain

*Report of the Iron Armour Committee.*

At the first meeting of the Committee, one of the subjects proposed was, "To consider on how small a scale the necessary preliminary experiments can be conducted." The Report says, "After the preliminary examination of witnesses, we proceeded, in accordance with our instructions, to carry out a series of experiments with ordnance with a view to the solution of the various questions submitted to us.

In



*Statements of the Science Commission.*

certain correlation of (?) one another, before the Committee began those very expensive trials on a large scale.

*Report of the Iron Armour Committee.*

In order to ascertain generally what qualities were desirable in armour plates, as well as to determine the relative power of resistance in plates of the same thickness but of different materials, we subjected to experiment plates of copper, of wrought iron, hammered as well as rolled, and obtained from different manufacturers; of homogeneous metal, of steel, and of a combination of iron and steel.

Several series of plates were prepared 4 feet by 3 feet. *Each series consisted of plates  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{3}{8}$ , 1,  $1\frac{1}{2}$ , 2,  $2\frac{1}{2}$ , and 3 inches in thickness.*

In ordering these plates we took care not to restrict the makers to any particular make or quality of iron, merely explaining that the plates were intended to resist projectiles at high velocities, and leaving each maker to exercise his own judgment as to the most suitable quality for the purpose. In this way we secured as great a variety in the character of the iron as possible, so that, after experiment, we might form our own opinion as to the special qualities to be desired in practice.

Report, 1861, p. xiv.

The preparation of these plates and the experiments on them occupied the first half of the year 1861, full details being given in the Report.

We put it to any person who can read, whether it is possible to imagine a more positive and entire contradiction than is here given in every particular, to the statements of your Grace's Commission on this point.

III.—Having shown the thorough inaccuracy of the only definite statements on matters of fact, we might reasonably ask the public to put equally little confidence in the more vague assertions put forward by your Grace's Commission to the prejudice of the Iron Armour Committee. We have no wish, however, to evade any charges made, and we extract the following statements in regard to the more general proceedings of our Committee :—

The plates fired at had no relation one to another, either in the relations to the guns, or to the form of backing, or in any other way; consequently it was difficult to draw useful calculations from them.

If a proper scheme had been drawn out and followed, the enormous amount of money would have been expended far more usefully.

Large expense was incurred to the nation in making what one might call random experiments.

A great part of that sum might have been spent infinitely more advantageously had there been a well-considered plan originally.

The investigation was conducted in such a manner as to involve a needless waste of time and money.

These statements mean, if they mean anything, that the Iron Committee being incompetent to devise and arrange any proper system of investigation, conducted experiments at random, having no definite plan or object, and no relations to the problem to be solved, so that no useful results could be drawn from them; and that they consequently involved an enormous waste of public money. In fact, the Committee are represented as behaving, during their four years' work, like a group of children playing with toys put in their hands.

We should have thought that such a charge would appear to men of judgment and fairness, on the face of it, monstrous and absurd. However, as it stands in the report under your Grace's authority, we must ask leave to give a brief statement of what the Committee actually did, from which your Grace and the public can judge what amount of credit is due to these accusations. We invite you to refer to the volumes of our Reports, and see that we give a fair account of our proceedings.

The first duty of the Committee was to make themselves acquainted with the knowledge already existing on the subject; and this they did in two ways.

In the first place they collected all the records of previous experiments, which they examined and classified; and, secondly, they called before them a great number of scientific and mechanical men who were likely to possess knowledge

bearing on the subject. We believe that everybody was called, without exception, who was considered likely to give useful information; and among the witnesses were Sir William Armstrong, Sir Joseph Whitworth, Captain Noble, R.A., General Lefroy, R.A., Mr. Lancaster, and Mr. Anderson, eminent authorities on modern artillery; Mr. Scott-Russell, Mr. Laird, Mr. Samuda, Mr. Grantham, Captain Hewlett, R.N., on naval constructions; Professor Wheatstone, Mr. Mallett, Mr. Nasmyth, Captain Inglis, R.E., on the general scientific and mechanical treatment of the question; and all the most eminent iron manufacturers in the kingdom, with Mr. Bessemer at their head, as to the properties of the material. These witnesses were examined very fully and carefully, and their evidence is given with comments and inferences in our first Report.

The next step was to undertake the preliminary experiments on a small scale already mentioned. These were not merely tried and recorded, but they were thoroughly and scientifically discussed, in regard to every bearing they could have on the general question, as the Report will show; to take Captain Galton's own expressions, they were studied in "their relations one to another, and in their relations to the guns (Report, para. 29) in relation to the backing" (Report, para. 33, and in many other places), and, in fact, in every "other way" that was likely to give useful deductions. Sir William Fairbairn contributed (Appendix A.) a very elaborate report on the mechanical properties of the plates, with an investigation of the mathematical formulæ deducible from the experiments. Another of our body contributed (Appendix B.) a metallurgical investigation of the quality of the material; and a third member wrote a scientific essay (Appendix C.) on the results of the experiments as showing the general laws of the action of shot, and the resistance offered by plate armour. Paras. 28 to 40 of the Report show how fully these *preliminary experiments* (the very existence of which is denied by your Grace's Commission) were studied and reasoned upon.

These preliminary experiments being disposed of it became necessary to follow them up by trials on a larger scale. These were difficult to prepare for; and the times when, and the order in which they were made being necessarily uncertain, an ill-informed outside observer might possibly entertain the idea that they were somewhat desultory. Nothing could, however, be further from the truth than this. The Committee had arranged a careful scheme (Report, page 53) of the points to be determined, and there was not an experiment which had not a definite object and aim.

It was impossible to tell by any *à priori* reasoning, or by any deductions from small trials, how the armour of ships would behave under actual fire. The Committee remarked:

One of the most striking deductions from our experiments is the difficulty, even for those most conversant with the subject, to foretell what are likely to be the results of untried schemes, however promising they may appear. The effect upon iron structures of heavy shot from modern ordnance, is totally unlike the result of any other kind of mechanical action, and has conditions essentially peculiar to itself; experiments, therefore, on a great scale are absolutely essential to determine the merits of many plans.

It was, therefore, determined, and wisely so, to make targets on the actual scale, representing portions of the sides of ships, armed in particular ways, and by firing at them, to ascertain their value in the most positive and unequivocal way. In this manner were constructed targets representing portions of the sides of the "Warrior," the "Minotaur," the "Bellerophon," the "Lord Warden," each differing in some essential particulars from the others. These were all tested to destruction by firing at them with heavy artillery, the effects were carefully examined and studied, and the practical inferences, in regard to each construction, duly reported on.

In addition to these the Committee tried several experimental targets in order to test certain principles of construction, which were proposed from time to time by eminent authorities, and the merits of which could only be determined in this way. Such were Sir William Fairbairn's target, Sir John Hawkshaw's target, Mr. Scott-Russell's target, Mr. Samuda's target, Mr. Chalmers's target. The information obtained by these trials was of the most conclusive and useful character.

Then the attention of the Committee was called strongly to the subject of iron protection to land fortification. There were absolutely no facts on this subject



subject of any value, and data could only be obtained by trials on a large scale. Accordingly several targets were made on different plans that appeared feasible, and were duly tested and reported on.

Many large experiments were also tried on the comparative effects of different kinds of projectiles, and generally on the use and effects of heavy artillery when employed against ironwork; for, although the subject of artillery generally was under the charge of another body (of whose experiments we freely availed ourselves, to avoid needless expenditure), it was only by the aid of our large iron constructions that this particular problem could be adequately investigated.

Our labours were chiefly experimental; they were expressly intended to be so, for this was the only sensible mode of investigation by which the questions submitted to us could be solved. No data existed, and theoretical speculations alone would have been idle waste of time. But we think it will be found that we did not neglect scientific and mechanical principles in the only way they could be of use, namely, in discussing the experiments, and drawing from them the inferences which rendered them of useful application. Our Reports contain abundant proof of this, large portions being devoted to scientific discussion.\*

No proof whatever can be afforded that "an enormous amount of money" was wasted. Some of the experiments were at the cost of the manufacturers, who desired that the Committee (on whose judgment and fairness they could rely) should by their trials gain information, to enable them to improve the manufacture. The actual amount spent at the public charge was by no means large, considering the great importance to the country of the results of the trials; and the saving resulting from the information gained, in preventing a waste of money in constructions that were proved to be useless or faulty, was such as far to outbalance the cost of the experiments. As a confirmation of this, we may mention that the Navy Estimates for the four years under consideration show how little was spent by the Iron Armour Committee.

As further evidence of the regularity and method of our proceedings, we annex, in an Appendix, a summary of our labours, given at the close of our last Report; and we invite your Grace to form an opinion from the statements laid before you, whether they substantiate your charge that our investigations were conducted at random, without definite object or plan, having no relation to the problems to be solved, from which no useful results could be drawn, and involving an immense waste of public money.

It is worth while to glance for a moment at another feature in the remarks of your Grace's Commission. They have not contented themselves with stating the evils resulting from the assumed bad management of our Committee, but they have volunteered to explain the cause; they say it was because our proceedings "*were planned without consultation with competent men of science.*"

This is a high-sounding phrase; but we fail to gather from it any intelligible meaning. We should like to be informed what could have been done that was not done, either by the Government or by ourselves, to ensure the experiments having proper scientific consideration.

We were commissioned to inquire into a subject then in its infancy, namely, the use of iron as a defence against heavy artillery. It was essentially a practical subject, to be studied practically and experimentally, but of course bringing to bear upon it all the aid that science could give. Who were the "competent men of science" best able to give advice in regard to this particular use of iron? We had already three scientific members on our Committee—one reputed the best scientific authority in Europe on the nature of the material, the other two with the largest experience of its scientific treatment in practical construction; and when, in addition to these, we had the advice and assistance of such men as Armstrong, Whitworth, Nasmyth, Scott-Russell, Samuda, Wheatstone, Mallett, Bessemer, and all the authorities, both scientific and practical, in the kingdom, not only on iron, but on the application we had to make of it—again we ask, what other "competent men of science" should have

\* Amongst other things we may mention that we made use of the theory of thermodynamics for the purpose of elucidating the action of the shot when striking the iron armour.

have been consulted? Would it have been of any use to apply to Dr. Hooker, the great botanist, or Professor Sharpey, the eminent physiologist, or Professor Stokes, the acute physicist, or Sir Roderick Murchison, the veteran geologist, or Sir George Airy, the Astronomer Royal, or Mr. Spottiswoode, the profound mathematician, or any other scientific men of that stamp, as to the best method of applying iron to ships and forts, so as to resist heavy shot? Would they not naturally and sensibly have replied, it was a technical matter, with which technical men were more competent to deal?

It seems to us too much the custom now-a-days to use the terms "science," "scientific men," and "scientific research," in a loose and indefinite way; and, with all respect, we cannot but regret to see such a countenance given to the habit by a body like your Grace's Commission.

It is with great reluctance we have felt ourselves compelled to address your Grace in this manner.

As to the evidence of Captain Galton, we are sure no one will regret more than he himself that he should have been led by imperfect information to make statements so inaccurate.

But in regard to the conduct of your Grace's Commission, we are bound to express our surprise that, before giving the authority and weight of the Commission to these grave charges against a Committee acting in a position as responsible as that of the Science Commission, and undertaking work of far more practical importance to the country, you should not have thought it worth while to take any steps to ascertain whether they were true.

Nothing would have been easier than for you to refer to the record of our proceedings, or to call before you one of our body, by either of which means your Commission would at once have seen the error they were falling into.

We make no scruple in asking your Grace to forward this letter to the Secretary of State for the Home Department, in order that he may give it the same publicity as the Report of the Royal Commission, of which you were Chairman.

We have, &c.  
(signed) J. C. D. Hay.  
W. Henderson.  
John Percy.  
William Pole.

We have been unable to consult Sir W. Jervois, owing to his absence as Governor of the Straits Settlements.

## APPENDIX.

EXTRACT from the Final Report of the Iron Armour Committee, 17th August 1864.

16. Having now recorded our opinion on the various subjects which we have considered and experimented on during the past year, we think it desirable to take this opportunity of laying before their Lordships a review of our proceedings from the commencement to the present time, and of the results which have followed from them.

17. The Special Committee on Iron was appointed by the Secretary of State for War at the beginning of the year 1861, and the work intrusted to them was, to investigate, generally, the application of iron to defensive purposes in war.

18. Our first object was to ascertain what information had already been gained on the subject, and with this view we collected all the records we could find of previous experiments or investigations. We have given in our first report a *résumé* of these at some length; suffice it here to state that although sufficient trials had been made to lead to a belief that iron was capable of forming a good protection against artillery, still very little useful practical knowledge had been acquired either as to the quality of material most efficient for the purpose, or the most advantageous mode in which the material should be applied.

19. Our next step was to learn the views held on the subject by those persons who were likely to be best acquainted with it, or whose opinions on it were likely to carry most weight; and we accordingly invited the attendance before us of a large number of witnesses



witnesses of several classes; for example, first, those who had already taken part in experiments on the subject, as Sir William Armstrong, Colonel Lefroy, and Captain A. Noble, of the Ordnance Select Committee; Captain Hewlett, of Her Majesty's ship "Excellent," and Captain Inglis, R.E. Secondly, the representatives of many of the most eminent iron manufacturing firms, as Mr. Bessemer, Mr. Clay, of the Mersey Works; Mr. Fenton, of Low Moor; Mr. Kitson, of Monk Bridge; Mr. Menelaus, of Dowlais; Mr. Parry, of Ebbow-Vale; Mr. Sanderson, of Park Gate; and many others. Thirdly, some of the most eminent iron shipbuilders, as Mr. J. Grantham, Mr. Hardy, of the Thames Iron Works; Mr. Laird, Mr. Samuda, and Mr. Scott-Russell. And lastly, scientific men, civil and mechanical engineers, and others who might be expected to have given attention to the subject generally, as Mr. John Anderson, Mr. Lancaster, Mr. R. Mallett, and Professor Wheatstone.

20. Our request for information from these witnesses was met in all cases in the most frank and liberal way, and the evidence given by them, which is very voluminous, is published at length in our first volume of proceedings. The opinions upon novel points were, as might be expected, very various; but the evidence is extremely valuable, and contains a great mass of information of the most useful and interesting character.

21. We should mention, however, that the advice and assistance we have obtained has not been confined to those whose names appear in our list of witnesses; for we have made a point of inviting, during the whole of our proceedings, the co-operation of all those who were able in any way to further our inquiries; and we have received from scientific and practical men great numbers of suggestions of various kinds, many of which have been of considerable value. And we may say, generally, that we have found the most liberal and wide-spread desire to aid in promoting the important national object in view.

22. The chief work carried on by the Committee has consisted of original investigations, of a practical and experimental character; and these have been directed to two classes of objects, viz.:—

First, to the determination of a great number of points affecting the general application of iron for defensive purposes; and,

Secondly, to the direct trial, by ordnance, of special constructions, in the shape of targets designed and prepared for the purpose.

We proceed to remark on what has been done in both these respects.

#### I.—Points affecting the General Application of Iron for Defensive Purposes, investigated by the Committee.

23. The first and most important point to consider was the nature of the material best adapted to resist the impact of shot, and this received the earliest attention of the Committee.

On this subject there was little positive knowledge at the time of the appointment of the Committee, and the evidence of the witnesses examined before them shows great diversity of opinion. Some witnesses were in favour of soft and tough wrought iron; others of steel of different kinds, and others again of combinations of steel and iron.

It was necessary to settle these doubts; and the Committee accordingly tried an extensive series of experiments, which led them to the conclusion that all steely material, either alone or in combination with iron, was objectionable, and that the most suitable material was simple wrought iron. They found that the best kind of iron was that which combined in the greatest degree the qualities of softness and toughness. It appeared to the Committee that the true principle of the use of defensive armour plates was to resist the blow in such a way as would do the least mischief to the structure; and that the best mode of accomplishing this would be to make the plates of soft, tough material, which would allow the work of the shot to be absorbed in indenting and battering them, without producing their fracture. This opinion was confidently enunciated by the Committee in their first Report (dated 24th March 1862), and subsequent experience has fully confirmed its correctness.

24. We have directed our attention to the mode of manufacture of armour plates, the principal point being to ascertain whether rolling or hammering was the better process. We have tried large numbers of plates made by both processes, and we have found that good plates may be made by either; but we consider, on the whole, the result of experience to be in favour of rolling, as more likely to produce softness and uniformity of quality; hammered plates have generally a tendency to be hard and unequal. At the same time rolled plates appear frequently liable to unsoundness of welding, a defect which has never been fully overcome. The general details of the process of manufacture we conceive it is most advisable to leave to the makers themselves.

In connection with this subject, we would draw attention to the great improvement in the manufacture of heavy iron plates which has taken place in the last three years, and which we believe to have been in a great degree due to the encouragement and stimulus afforded to the makers to improve this manufacture as much as possible. We adopted the plan of inviting them to see the experiments, and to study carefully the effect of shot upon the plates; giving them, at the same time, the benefit of all information in our possession which could throw light on the subject. We have reason to know the opportuni-

ties we thus afforded were of the greatest use, for by no other means whatever could any such complete insight have been obtained into the nature of the problems to be solved, and the conditions necessary for their solution; and further, we have reason to know that this system has given universal satisfaction.

The iron manufacturers availed themselves willingly of the facilities we afforded them, and the result has been, that whereas at the time of our appointment there were very few ironmasters who could make thick armour plates, and those of very uncertain quality, there are now many excellent makers, and the general average quality is very much improved.

It is also a great sign of improvement that much thicker plates can be made of good quality than formerly. In our first trials we could scarcely rely on the quality of any plates above 3 inches thick; now 5 and 5½ inches are common thicknesses of approved quality, and some of the best plates we have tried have been thicker still.

25. Plates of French manufacture have been tried; but although the iron used for their manufacture is of superior quality, being remarkably free from all injurious impurities, yet the plates at first all more or less failed in the manufacture, particularly as respect the welding, which was exceedingly imperfect.

26. Another very important point of our inquiry was the form in which iron could most favourably and economically be used for defensive purposes. Various opinions were also held on this subject at the time of our appointment; some authorities recommended a peculiar arrangement of bars, which previous experiments had to a certain extent favoured; certain eminent engineers and shipbuilders suggested a number of thin plates, well fastened together, a form which was thought to present great advantages for naval purposes, in affording support to the structure, and at the same time great facility and economy of construction; while a great number of other schemes for bent plates, corrugations, ribs, bosses, and many other ingenious contrivances, had their supposed advantages strongly urged on our attention. More than 400 plans have been submitted to us; our reports will show that we have carefully investigated all these suggestions, and that through all these complications we have arrived at the simple result that the best application of the material is a single plate of uniform thickness, with the surface perfectly plane.

27. We endeavoured to investigate at an early period the laws of resistance in plates of different thicknesses to projectiles of different weights, and with different velocities. We arrived at an inference, that with plates of equally good quality the resisting power might be approximately considered proportional to the squares of their thicknesses; but in attempting to compare this with the damaging power of the projectile, we found the latter to depend so much on the material of which it was made, that, in default of further experiments, we were unable to deduce any rule that could be relied on.

28. As regards the sizes of armour plates, we have also arrived, experimentally, at a distinct conclusion that large size is an advantage, small and narrow plates being found weaker than large and wide ones of the same thickness and same quality.

At the same time it must always be borne in mind that the smaller the plates the easier their manufacture, the most trustworthy their quality, and the less their cost per ton.

29. At the time of our appointment it was supposed to be an advantage to connect the edges of adjoining plates together by grooveing and tongueing, and this method was adopted in the "Warrior." We have shown that it was a mistake, doing mischief instead of good, and it has been abandoned in all vessels built subsequently to our report to this effect.

30. The process of bending armour plates involved difficulties which led to the question being referred to our consideration. We investigated the subject, and we believe that the recommendations contained in our report have proved satisfactory.

31. Another point of great uncertainty was as to the best mode of fastening armour plates to the ship's side. The plan adopted at the time of our appointment was by simple conical-headed bolts countersunk into the plate, passing through the ship's hull and fastened with nuts on the inside. There was, however, a very general distrust of this mode of fastening; the bolts were liable to break, and the bolt holes were said to weaken the plate seriously, and to induce its fracture. For this reason numberless schemes were devised for doing away with bolts and substituting other means of fastening; and our experiments have comprised very extensive trials, not only of bolts and nuts, but of many other descriptions of fastenings.

The result, however, of our experiments led us in our first report to show that the objections to bolts and nuts had not nearly so much weight as was supposed, provided only that the bolts were made of sufficiently large diameter, and of the toughest possible quality of iron. The bolts in the "Warrior" were 1½ inch diameter, but in our first report, of March 1862, we recommended that bolts should not be used of less than two inches diameter, and further experience has led us subsequently to recommend a still greater increase. It is only recently that our recommendation in this respect has been adopted; but we believe that under this condition, with the addition of some elastic substance under the nut, the bolt and nut, which is the simplest of all fastenings, will prove a perfectly efficient



efficient one. The objection that bolt holes weakened the plates appears to have little weight if the plates are of soft iron.

Our last experiment, that on the "Small Plate" target, was made to test the efficiency of fastening by wood screws, the marked success of which induces us to recommend the plan for further trial.

32. Great interest has always been attached to the question of the backing most suitable for ship armour plates. When these were first used they were fixed directly upon the hull of timber ships, and when they were first applied to iron ships (in the case of the "Warrior") it was thought expedient to imitate the former condition by placing a backing of wood between the armour plate and the hull of the vessel.

Many objections were raised to this; the wood backing was said not only to be unnecessary, but to be absolutely prejudicial, as liable to decay, and to destruction by fire and by shells. It was necessary we should thoroughly test this, and elaborate experiments were designed and carried out for the purpose; but we have been unable to recommend that the wood backing should be dispensed with, as it appears to perform important functions for which no thoroughly efficient substitute has yet been found.

33. A facing of wood, or other soft material, has often been recommended, and has been experimented on by us; but while we have found it diminishes to some extent the effect of shot, we have judged it inadmissible on account of its easy destructibility by shell.

34. Many combinations of thin iron plates with layers of other substances interposed, have been suggested and tried; but never with such results as to warrant our recommending any of them.

35. A series of valuable investigations has been carried on by Mr. Fairbairn, on the mechanical properties of specimens of various plates and shot tried by us, for the details of which we refer to the Appendix of this and the previous reports.

36. The chemical composition of the iron of 14 different armour plates has been accurately determined, and the conclusion is, that the purer the iron, the more suitable is its quality, provided it does not contain sufficient carbon to render it decidedly steel-like. It has been ascertained that soundness of manufacture is even more important than freedom from certain impurities injuriously affecting tenacity, to the extent to which they are frequently present in British iron. Thus, while of all the varieties of iron analysed, the French was found to be the most free from foreign matters, yet in comparative trials of some of the thick French armour plates, with English plates of equal thickness, the latter offered more effectual resistance, and were less damaged than the former.

This is a point of great practical importance; and it is a matter of congratulation that armour plates may be made with iron obtained from British ores, by the ordinary processes of smelting and manufacture with mineral fuel, not only equal, but superior to foreign plates, consisting of iron smelted with the more costly fuel charcoal, and therefore necessarily more expensive to produce.

37. A great number of experiments have been made, jointly by ourselves and the Ordnance Select Committee, to determine the influence of variations in the weight, velocity, form and material of projectiles as regards their effect on iron plates.

A summary of the state of this question in January 1863, will be found in Mr. Pole's memorandum, from which it will be seen that it was considered desirable to make further experiments as soon as the use of projectiles of a better material could be insured. Since that time, therefore, this object has been specially kept in view, and extensive trials of steel shot have been made, which we believe will result in the attainment, without much difficulty, of the desired end. We conceive it highly important that steel shot should be introduced as early as possible into general use for large guns, this material being almost indispensable when iron armour is to be attacked.

38. Some experiments, tried previously to our appointment, had led to the inference that plates placed at a considerable angle to the line of fire, would more efficiently resist the impact of shot; but experiments instituted by us for the purpose showed that, for rifled projectiles, at least, no advantage was gained by this expedient, where an equal weight of iron was used for defence.

39. It had often been proposed to use wrought-iron plates as a protective facing to brickwork and masonry. We experimented on this, and with partial success, as detailed in our first Report.

## II.—Special Constructions for Iron Defence experimented on by the Committee.

40. We have submitted to actual trial with ordnance a large number of targets. In testing these we have used artillery of great power, and in cases where experimental guns have been employed, we have acted conjointly with the Ordnance Select Committee. The results have been fully recorded in our previous Reports and their Appendices, and it is therefore only necessary here to make brief reference to them.

41. The "Warrior" target was constructed to represent a portion of the side of the "Warrior" frigate, with a view of testing its power to resist the attack of heavy artillery.

It has been found to have so great resisting power as to compare favourably with every other construction of equal weight we have tried.

42. Mr. Fairbairn's target, the Committee's target, and Mr. Samuda's target, were all made to test the possibility of dispensing with wood backing; the result was unsatisfactory in every case.

43. Mr. Scott Russell's target had the same object in view; but its chief novelty was a peculiar mode of securing the plate by continuous longitudinal riveting. The latter answered well, but was considered objectionable, on the ground of the difficulty and expense of its construction. The target had great resisting power, but was very heavy.

44. Shields of Grooved and Tongued Bars.—These were intended for embrasures of coast batteries. The plan had, in previous experiments, when comparatively light guns were used, given signs of promise; but our experiments, as far as they have yet gone, have not warranted us in recommending it for adoption. Further experiments, however, are needed to justify a decided conclusion respecting this plan.

45. Targets of Thin Plates Bolted and Riveted together.—These were found to be very weak in proportion to the quantity of metal they contained.

46. Mr. Roberts's target was principally intended to test the ridge and furrow disposition of surface for the iron armour. It signally failed.

47. Captain Inglis's Shields.—These were intended for embrasures, and were composed of layers of large planks of iron crossing each other, and strongly bolted together. They answered well, and have formed the best structure of the kind we have yet met with.

48. The "Minotaur" target was intended to represent the side of the new class of frigates known under this name. It differed from the "Warrior" in having thicker iron plates, and thinner wood backing, an alteration which we did not find advantageous.

49. Mr. Clark's target contained several complicated constructions, none of which appeared to us to be deserving of adoption.

50. Mr. Chalmers's target had some new features of considerable importance, and was found to resist a great attack of shot with less injury than any other target (designed for naval purposes) we had tried.

51. The "Bellerophon" target was constructed to represent a portion of the side of the frigate of that name. It also showed great resisting power.

52. The "Lord Warden" target and the "Small Plate" target conclude the series. They are referred to in the present Report.

53. Extensive experiments to test different modes of applying iron to fortifications, and for which arrangements are now in progress at Shoeburyness, still remain to be tried.

54. The Committee cannot conclude their final Report, without referring to a matter of urgent importance, and to which they have drawn their Lordships' attention on more than one occasion. It is the necessity for the supply, without further delay, of powerful guns, which will be capable of effectually damaging iron-plated ships; and further, that all such guns should be supplied with a large proportion of steel shot and shells.

As regards the power of the guns which should be manufactured, it has been found, after numerous and conclusive experiments on iron targets, that nothing less than ordnance of 12 tons weight, and capable of bearing a 45-lbs. charge, can successfully attack an armour-plated structure, such as the "Warrior." A sufficient supply of guns of at least this power is therefore urgently required.

LETTER from Captain *Douglas Galton* to the Chairman of the Royal Commission on Scientific Education.

My Lord Duke,

12, Chester-street, Grosvenor-place,  
London, May 1877.

I HAVE received on my return from the United States your Grace's letter endorsing a copy of a communication from some members of the Armour-Plate Committee, on the subject of a part of the evidence which I gave before the Royal Commission on Scientific Instruction.

I am very sorry that my evidence has been the cause of so much trouble to you, and that my absence from England prevented me from communicating with you before it became necessary to send a reply to the communication from the Armour Plate Committee.

I made one mistake in my evidence, viz., I said that the Committee had not received any instructions. In my remarks on that subject I had in my mind the  
large



large number of experiments which had been going on, both at the "Excellent" and at Woolwich, for some years before the appointment of the Armour Plate Committee, and which are included in the Appendix to the Report of the Committee, as well as the experiments of the Armour Plate Committee itself.

I much regret that I did the War Office the injustice of saying that the Armour Plate Committee did not receive sufficient instructions.

The Report of the Armour Plate Committee is so drawn as to give the impression that all the larger experiments made by them were led up to by experiments on a small scale; and the letter of 22nd March 1877, addressed to your Grace, distinctly alleges (page 8) that "when the preliminary experiments in their relations one to another, in their relations to the guns, to the backing and in every other way likely to give useful deductions, had been disposed of, and after these experiments had been studied and reasoned upon in a very elaborate Report by Sir W. Fairbairn, and a scientific essay on the general laws of the action of shot by Dr. Pole, they were followed up by experiments on a large scale."

An examination of the Appendix to the Report of the Armour Plate Committee showing the dates on which the several experiments were made, and the Reports alluded to were furnished, shows that many of the experiments on targets or large scale experiments, preceded those which the Committee now admit were necessary for enabling them to obtain data from which to construct the targets.

The following tabular statement explains this:—

EXPERIMENTS.	Dates on which the Experiments were made.
On plates of different thicknesses - - - - -	23 April - 1861. 24 April - " 27 May - " 28 May - " 5 June - " 14 October - "
On backing - - - - -	January 1862.
On obliquity of plates - - - - -	4 June - 1861.
On corrugated plates - - - - -	14 October - "
On covering plates - - - - -	29 June - "
Sir W. Fairbairn's Report on Mechanical Properties, &c. - - - - -	18 October - "
Dr. Pole's Essay on Action of Shot - - - - -	January 1862.
Report on Velocity of Shot - - - - -	October 1861.
Large scale experiments on targets - - - - -	6 June - 1861. 23 June - " 29 June - " 29 July - "
Large scale experiments on "Warrior" targets.	21 October - "

It will thus be seen that the experiments on plates of different thicknesses were not concluded till the 5th of June 1861, those on obliquity of shot were made on 4th June 1861, those on backing were made only in October 1861 and January 1862, whilst several large targets which required many weeks, if not months, to build, to convey to Shoeburyness, and to set up, were ready and experimented upon as early as the 6th of June and in July 1861. These dates fully bear out my statement that the Committee made experiments on targets on a large scale before they had sought data for the best form of target from experiments on a small scale. Moreover, the Committee sought for such data by subsequent experiments, and thus the money spent upon the experiments would have been more usefully expended if the scheme laid down in their instructions had been closely adhered to.

Believe me, &c.  
(signed) Douglas Galton.

His Grace the Duke of Devonshire, K.G.

NAVY (IRON ARMOUR).

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COPIES of a LETTER from the late MEMBERS of the IRON PLATE COMMITTEE to the CHAIRMAN of the ROYAL COMMISSION ON SCIENTIFIC EDUCATION; of a LETTER from the CHAIRMAN addressed to the HOME SECRETARY in regard thereto; and, of a LETTER from Captain Douglas Galton to the CHAIRMAN.

(*Sir Henry Selwyn Ibbetson.*)

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*Ordered, by The House of Commons, to be Printed,  
31 May 1877.*

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RETURN to an Order of the Honourable The House of Commons,  
dated 2 March 1877;—for,

NOMINAL LISTS “of all IRON-CLADS, and Date of their first Completion  
for Sea:”

“Of IRON-CLADS which have received NEW BOILERS since their first Com-  
pletion, and Date when these Boilers were put on Board:”

“LIST of IRON-CLADS for which BOILERS are now in Store:”

“And, RETURN of the Number of Tons Built up to the present Date of all  
IRON-CLADS now Building (in continuation of Parliamentary Paper,  
No. 224, of Session 1876).”

Admiralty, }  
5 April 1877. }

THOS. WOLLEY,  
Chief Clerk.

(*Sir John Hay.*)

Ordered, by The House of Commons, to be Printed,  
6 April 1877.

NOMINAL LISTS of all IRON-CLADS, and Date of their first Completion for Sea:—Of IRON-CLADS which have received NEW BOILERS since their first Completion, and Date when these Boilers were put on Board.

Rate.	Guns.	Tons.	Horse-power.	N A M E S.	Date of First Completion for Sea.	If fitted with New Boilers since First Completion, and when.
BROADSIDE SHIPS:						
3rd	17	6,621 (a) 10,627	1,350 (b) 6,867	Agincourt - - - -	19 Dec. 1868	New boilers fitted on board in 1876.
3rd	17	6,621 (a) 10,627	1,350 (b) 6,702	Minotaur - - - -	1 June 1867	New boilers fitted on board in 1875.
3rd	28	6,621 (a) 10,584	1,350 (b) 6,558	Northumberland - - -	8 Oct. 1868	No. New boilers will be fitted on board in 1877.
3rd	16	6,121 (a) 9,694	1,250 (b) 5,722	Achilles - - - -	26 Nov. 1864	New boilers fitted on board in 1874.
3rd	28	6,109 (a) 9,137	1,250 (b) 5,772	Black Prince - - -	12 Sept. 1862	New boilers fitted on board in 1875.
3rd	12	- (a) 9,492	- (b) 8,000 Twin screw.	Alexandra (late Superb) -	31 Jan. 1877	No.
3rd	32	6,109 (a) 9,137	1,250 (b) 5,469	Warrior - - - -	24 Oct. 1861	New boilers fitted on board in 1872.
3rd	15	4,270 (a) 7,551	1,000 (b) 6,521	Bellerophon - - - -	11 April 1866	New boilers fitted on board in 1870.
3rd	18	4,089 (a) 6,713	800 (b) 3,256	Hector - - - -	22 Feb. 1864	New boilers fitted on board in 1875.
3rd	18	4,063 (a) 6,713	800 (b) 3,560	Valiant - - - -	15 Sept. 1868	- - ditto.
4th	16	3,720 (a) 6,070	600 (b) 2,537	Defence - - - -	12 Feb. 1862	New boilers fitted on board in 1873.
4th	16	3,710 (a) 6,070	600 (b) 2,428	Resistance - - - -	5 Oct. 1862	- - ditto.
4th	14	5,234 (a) 8,677	1,200 (b) 8,529	Hercules - - - -	21 Nov. 1868	No. New boilers will be fitted on board in 1877.
4th	12	5,234 (a) 9,286	1,200 (b) 8,629	Sultan - - - -	10 Oct. 1871	No.
5th	11	3,096 (a) 4,394	600 (b) 4,703 Twin screw.	Penelope - - - -	27 June 1868	New boilers will be fitted on board in 1877.
4th	14	3,774 (a) 6,034	800 (b) 4,832 Twin screw.	Invincible - - - -	1 Oct. 1870	Boilers worn out and have been removed. New boilers about to be fitted.
4th	14	3,774 (a) 6,034	800 (b) 4,021 Twin screw.	Audacious - - - -	10 Sept. 1870	New boilers fitted on board in 1874.
4th	14	3,787 (a) 6,034	800 (b) 4,268 Twin screw.	Iron Duke - - - -	21 Jan. 1871	No. New boilers will be fitted on board in 1877.
4th	9	- (a) 5,103	- (b) 3,500	Shannon - - - -	Not completed	No.
4th	14	3,893 (a) 6,660	800 (b) 4,913	Swiftsure - - - -	27 June 1872	No.

(a) This is the Load Displacement.

(b) This is the Indicated Horse-power.

NOMINAL LISTS of all Iron-Clads, and Date of their first Completion for Sea, &c.—*continued.*

Guns.	Tons.	Horse-power.	N A M E S.	Date of First Completion for Sea.	If fitted with New Boilers since First Completion, and when.
BROADSIDE SHIPS— <i>continued.</i>					
14	3,893 (a) 6,660	800 (b) 4,892	Triumph - - - -	8 April 1873	No. New boilers will be fitted on board in 1877.
12	- (a) 7,323	- (b) 6,000 Twin screw.	Nelson - - - -	Not completed	No.
12	- (a) 7,323	- (b) 6,000 Twin screw.	Northampton - - -	Not completed	No.
8	- (a) 8,412	- (b) 7,000 Twin screw.	Temeraire - - - -	Not completed	No.
4	737 (a) 1,228	160 (b) 696 Twin screw.	Viper - - - -	6 July 1867	No. } New boilers to be sent out this year to Bermuda.
4	754 (a) 1,228	160 (b) 740 Twin screw.	Vixen - - - - (Iron and Wood.)	15 Nov. 1866	
4	778 (a) 1,279	160 (b) 777 Hydraulic.	Waterwitch - - - -	6 July 1867	No.
18	4,080 (a) 7,842	1,000 (b) 6,706	Lord Warden - - -	30 Aug. 1867	New boilers fitted on board in 1876.
12	3,749 (a) 6,190	800 (b) 3,347	Repulse - - - -	31 Jan. 1870	No.
8	2,372 (a) 3,787	600 (b) 3,581	Pallas - - - -	4 April 1866	New boilers put on board in 1871.
4	1,253 (a) 1,741	200 (b) 1,042	Research - - - -	31 May 1864	New boilers put on board in 1869.
R A M:					
3	2,637 (a) 4,010	600 (b) 3,497 Twin screw.	Hotspur - - - -	17 Nov. 1871	No. New boilers will be fitted in 1877.
TURRET SHIPS:					
7	5,102 (a) 8,322	1,100 (b) 7,842	Monarch - - - -	5 Aug. 1869	No.
4	2,529 (a) 3,905	500 (b) 2,128	Prince Albert - - -	23 Feb. 1866	No.
4	1,833 (a) 2,751	350 (b) 1,455	Scorpion - - - -	10 Oct. 1865	No.
4	1,899 (a) 2,751	350 (b) 1,446	Wivern - - - -	10 Oct. 1865	No.
4	- (a) 10,886	1,000 (b) 8,000 Twin screw.	Dreadnought - - - (late Fury.)	Not completed	No.
4	- (a) 11,406	- (b) 8,000 Twin screw.	Inflexible - - - -	Not completed	No.

(a) This is the Load Displacement.

(b) This is the Indicated Horse-power.

## RETURN RELATING TO IRON-CLADS (NAVY).

NOMINAL LISTS of all Iron-Clads, and Date of their First Completion for Sea, &c.—*continued.*

Rate.	Guns.	Tons.	Horse-power.	N A M E S.	Date of First Completion for Sea.	If fitted with New Boilers since First Completion, and when.
TURRET SHIPS— <i>continued.</i>						
6th	2	2,709 (a) 4,912	500 (b) 2,868 Twin screw.	Glatton * - - - -	24 Feb. 1872	No.
4th	4	4,407 (a) 9,190	800 (b) 6,652 Twin screw.	Devastation - - - -	19 April 1873	No.
4th	4	4,407 (a) 9,190	800 (b) 5,600 Twin screw.	Thunderer - - - -	Not completed	No, except one boiler to replace that destroyed by the explosion in 1876.
6th	4	2,107 (a) 3,430	250 (b) 1,660 Twin screw.	Cyclops - - - -	Delivered by Contractors Dec. 1871.	No.
6th	4	2,107 (a) 3,430	250 (b) 1,755 Twin screw.	Hecate - - - -	Delivered by Contractors Mar. 1872.	No.
6th	4	2,107 (a) 3,430	250 (b) 1,670 Twin screw.	Gorgon† - - - -	Delivered by Contractors May 1872.	No.
6th	4	2,107 (a) 3,430	250 (b) 1,472 Twin screw.	Hydra - - - -	Delivered by Contractors July 1872.	No.
4th	4	3,159 (a) 5,444	700 (b) 4,635 Twin screw.	Rupert - - - - (Ram and Turret Ship).	1 July 1874	No.

## IRON-CLADS BUILDING.

					Probable Date of Launching.	Probable Date of Completion.	Number of Tons Built to 31 March 1877.
TURRET SHIPS:							
-	4	- (a) 8,492	- (b) 6,000 Twin screw.	Agamemnon - - - -	Uncertain -	Uncertain -	678
-	4	- (a) 8,492	- (b) 6,000 Twin screw.	Ajax - - - -	May 1879 -	Uncertain -	431

(a) This is the Load Displacement.

\* Employed as Tender to "Excellent."

(b) This is the Indicated Horse-power.

† Employed as Tender to "Cambridge."



## LIST of IRON-CLADS for which Boilers are now in Store, or in Course of Construction.

NAME OF SHIP.	Horse-power.		Number of Sets.	REMARKS.
	Nominal.	Indicated.		
Northumberland - - - -	1,350	6,558	1	To be placed on board.
Hercules or Sultan - - - -	1,200	8,529	1	In course of construction.
Monarch - - - - -	1,100	7,842	1	In course of construction.
Swiftsure Class - - - - -	800	4,913	1	In store.
Invincible Class - - - - -	800	4,832	1	In store.
Iron Duke - - - - -	800	4,268	1	Being prepared for Iron Duke.
Penelope - - - - -	600	4,703	1	In course of alteration to fire tube boilers.
Spare - - - - -	800	3,347	1	} In store.
Spare - - - - -	800	3,434	1	
Prince Albert Class - - - -	500	2,128	1	
Scorpion, or Wivern - - - -	350	1,455	1	
Viper, or Vixen - - - - -	160	740	1	To be sent to Bermuda for Viper.

NAVY (IRON-CLADS).

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NOMINAL LISTS of all Iron-Clads, and Date of their first Completion for Sea; of Iron-Clads which have received New Boilers since their first Completion, and Date when these Boilers were put on Board; List of Iron Clads for which Boilers are now in Store; and, RETURN of the Number of Tons Built up to the present Date of all Iron-Clads now Building (in continuation of Parliamentary Paper, No. 224, of Session 1876).

(*Sir John Hay.*)

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*Ordered, by The House of Commons, to be Printed,  
6 April 1877.*

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SIR ALEXANDER MILNE (SPECIAL PENSION).

677

COPY of CORRESPONDENCE relative to the Award of a SPECIAL PENSION  
to Admiral Sir *Alexander Milne*, G.C.B.

Admiralty, }  
19 April 1877. }

The Secretary to the Admiralty to the Secretary to the Treasury.

Sir, Admiralty, S.W., 2 October 1876.

My Lords Commissioners of the Admiralty desire to bring before the Lords Commissioners of Her Majesty's Treasury the services of Admiral Sir Alexander Milne, G.C.B., in the conduct of the Naval Administration of the Country, which they consider to be deserving of special recognition in the way of pension.

2. Sir Alexander Milne has enjoyed the confidence of many different Administrations as a Naval Adviser. He was a member of the Board of Admiralty from the 23rd December 1847 to 27th June 1859.

He filled the post of First Naval Lord from 13th July 1866 to 17th December 1868, and again from 27th November 1872 to 6th September 1876. His Services at Whitehall have thus been spread over a period of nearly 29 years, during which he actually held office for 17 years and 269 days, comprising the period during which the Country was engaged in the Crimean war. He will, if he be alive, be placed on the Retired List on the 11th day of November next, on attaining the age of 70 years.

3. My Lords are of opinion that, in consideration of his long and valuable services at the Admiralty, a Special Civil Pension of 1,000 *l.* per annum should be awarded to this distinguished Officer, commencing from the 6th ultimo, when he retired from the post of First Naval Lord. Should the Lords of the Treasury concur with the views of my Lords, I am to request they will take such steps as are necessary to give effect to the proposal.

4. In making this application, their Lordships of the Admiralty have made no reference to the services of the Officer afloat, in highly responsible Commands, which have from time to time received honourable recognition at the hands of his Sovereign.

I am, &c.

The Secretary to the Treasury.

(signed) *Algernon Egerton.*

(15,843-76.)

Mr. W. Law to the Secretary to the Admiralty.

Sir, Treasury Chambers, 19 October 1876.

I HAVE laid before the Lords Commissioners of Her Majesty's Treasury Mr. Egerton's letter of 2nd instant, in which, by desire of the Lords Commissioners of the Admiralty, he brings to the notice of this Board the services of Sir Alexander Milne, G.C.B., as Naval Adviser to the Board of Admiralty, and in other capacities, for a period of nearly 29 years, and submits that the Services of that Officer are deserving of special recognition in the way of pension.

1,000*l.*

My Lords have directed me to state that, in view of the testimony borne by the Lords of the Admiralty to the long and valuable services rendered by Sir Alexander Milne, and to the impossibility of awarding him a Retired Allowance under the provisions of the Superannuation Acts, they consent to the grant of a Special Pension of one thousand pounds per annum to this distinguished Officer, as an exceptional case, and a mark of the sense entertained by Her Majesty's Government of the value of his services.

This allowance to be charged to Naval Funds as a Naval Pension, and to commence from the 1st October instant.

I am to add that, as the arrangement is of an exceptional character, my Lords are of opinion that the correspondence should be laid before Parliament.

The Secretary to the Admiralty.

I am, &c.  
(signed) *William Law.*

The Secretary of the Admiralty to Admiral Sir *Alexander Milne*, G.C.B.

Sir,

Admiralty, S.W., 31 October 1876.

1,000*l.*

I AM commanded by my Lords Commissioners of the Admiralty to transmit to you herewith a copy of a letter received from the Lords Commissioners of Her Majesty's Treasury, assenting to a proposal made by my Lords to award to you a Special Pension of one thousand pounds a year; such Pension being awarded as an exceptional case, and a mark of the sense entertained by Her Majesty's Government of the value of your Services.

Instructions have been given to Her Majesty's Paymaster General to pay your Pension from the 1st instant.

Admiral Sir Alexander Milne, Bart., G.C.B.

I am, &c.  
(signed) *Robert Hall.*

Admiral Sir *Alexander Milne*, G.C.B., to the Secretary of the Admiralty.

Sir,

Inveresk, Musselburgh, 3 November 1876.

I HAVE the honour to acknowledge the receipt of your letter of the 31st October, marked P., with enclosure from W. Law, Esq., of the Treasury, dated the 19th ultimo, conveying to me the information that a Special Pension of 1,000*l.* a year had been granted to me as an exceptional case. I request you will convey to the Lords Commissioners of the Admiralty my sincere thanks for their consideration of any services I may have rendered at the Admiralty during a long period of years, and in having brought my name to the special notice of Her Majesty's Treasury, and I acknowledge with grateful thanks the liberal Pension which has been granted to me, and, at the same time, to express to the members of the Board my acknowledgments for the very complimentary terms in which this communication has been conveyed.

The Secretary of the Admiralty.

I have, &c.  
(signed) *Alexander Milne,*  
Admiral.





SIR ALEXANDER MILNE (SPECIAL  
PENSION).

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COPY of CORRESPONDENCE relative to the Award  
of a SPECIAL PENSION to Admiral Sir Alexander  
Milne, G.C.B.

(Presented by Her Majesty's Command.)

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Ordered, by The House of Commons, to be Printed,  
23 April 1877.

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NAVAL PRIZE MONEY, &c. ;

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AN ACCOUNT

SHOWING THE

RECEIPT AND EXPENDITURE

OF

NAVAL PRIZE, BOUNTY, SALVAGE, AND OTHER MONEYS,

BETWEEN THE

1st APRIL 1876 and the 31st MARCH 1877.

Admiralty, }  
2 August 1877. }

THOS. WOLLEY,  
Chief Clerk.

*(Presented pursuant to Act 27 & 28 Vict: c. 24.)*

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*Ordered, by The House of Commons, to be Printed,*  
*3 August 1877.*

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## AN ACCOUNT showing the RECEIPT and EXPENDITURE of NAVAL PRIZE, BOUNTY

(Prepared pursuant to Her Majesty's Order in Council of the

	£.	s.	d.	£.	s.	d.
<b>UNCLAIMED SHARE ACCOUNT PRIOR TO 1ST APRIL 1865 :</b>						
To Balance of Unclaimed Prize, Bounty, Salvage, and other Moneys remaining on the 1st April 1876 - - - - -	4,157	7	-			
To Amount of a dividend from the Estate of the late Mr. J. Hinxman, in connection with the Slavers "Fathé Eslamo," Zaruga, and "Don Pedro," captured by H.M.S. "Curlew," in 1840, this sum being too small for further distribution. The shares which remained unclaimed in 1864-65 were in that year transferred to this account - - - - -	15	17	8			
				4,173	4	8
<b>GOVERNMENT PER-CENTAGE ACCOUNT:</b>						
To Balance of Amount of per-centage deductions remaining on the 1st April 1876	7,707	12	6			
To Amount of per-centage deductions from the net sums distributable, brought to account in the year - - - - -	1,058	17	1			
				8,766	9	7
<b>PRIZE FORFEITURES BY DESERTION, &amp;c. :</b>						
To Balance of Amount of shares forfeited by Desertion, &c., remaining on the 1st April 1876 - - - - -	1,616	15	5			
To Amount of Shares forfeited by Desertion, &c., brought to account during the year	20	14	3			
				1,637	9	8
<b>SLAVE AND TONNAGE BOUNTIES:</b>						
To Balance of the Proceeds of the Sale of certain Slave Vessels, including Slave and Tonnage Bounties awarded, remaining on the 1st April 1876, and detailed in Paper (A.) annexed - - - - -	14,114	10	6			
To Proceeds of the Sale of certain Slave Vessels captured by Her Majesty's Ships, including the amount of Slave and Tonnage Bounties awarded, &c., as per Paper (A.) annexed, paid to the Naval Prize Account of Her Majesty's Paymaster General at the Bank of England between 1st April 1876 and 31st March 1877, under Her Majesty's Order in Council of the 5th December 1865 (pursuant to Act 27 & 28 Vict. c. 24) - - - - -	16,012	17	8			
				30,127	8	2
Carried forward - - - £.	44,704	12	1			



AVAGE, and other MONEYS, between the 1st April 1876 and the 31st March 1877.

December 1865, under Act 27 & 28 Vict. c. 24.)

	£.	s.	d.	£.	s.	d.
UNCLAIMED SHARE ACCOUNT PRIOR TO 1ST APRIL 1865:						
Amount of Unclaimed Shares of Prize, Bounty, Salvage, and other Moneys distributed and paid during the year out of the Balance, per contra - - -	-	-	-	45	10	5
<i>Note.</i> —The sum of 36,000 <i>l.</i> (in addition to the 173,000 <i>l.</i> referred to in the Annual Account for 1854–55, Parliamentary Paper, No. 233, of Session 1855) was transferred from this Account to the Consolidated Fund, between 1st April 1855 and 31st March 1865, and is available, under the 17th section of Act 27 & 28 Vict. c. 24, for the payment of any claim on account thereof, which the Naval Prize Cash Balance may not be sufficient to meet.						
GOVERNMENT PER-CENTAGE ACCOUNT:						
Amount of Allowances paid to the Accountant General, and to the Clerk for preparing the Annual Account - - - - -	-	-	-	150	-	-
SLAVE AND TONNAGE BOUNTIES:						
Amount distributed and paid during the year out of the Balance and Receipts, per contra, as detailed in Paper (A.) annexed - - - - -	-	-	-	13,973	14	-
Carried forward - - - £.				14,169	4	5

## RECEIPT AND EXPENDITURE OF NAVAL PRIZE, BOUNTY, SALVAGE,

AN ACCOUNT showing the RECEIPT and EXPENDITURE of NAVAL PRIZE, BOUNTY,

	£. s. d.	£. s. d.
Brought forward - - -	- - -	44,704 12
SALVAGE SERVICES RENDERED BY HER MAJESTY'S SHIPS:		
To Balance of Amount recovered from Owners of certain Merchant Vessels for Salvage Services rendered to them by Her Majesty's Ships, remaining on the 1st April 1876 - - - - -	2,233 14 4	
To Amount received from the Royal Mail Steam Packet Company for Salvage Services rendered to the "Shannon," by Her Majesty's Ships "Dryad" and "Heron," 9th to 24th September 1875, and paid to the Account of Her Majesty's Paymaster General at the Bank of England, between 1st April 1876 and 31st March 1877, under Her Majesty's Order in Council of 5th December 1865 (pursuant to Act 27 & 28 Vict. c. 24) - - - - -	1,500 - -	3,733 14 4
BOUNTY FOR DESTRUCTION OF PIRATES:		
To Balance of Amount of Bounty Money awarded to the Officers and Crews of Her Majesty's Ships, under Votes of Parliament, for the destruction of Pirates, remaining on the 1st April 1876 - - - - -	4,004 1 7	
To Amount awarded to the Officers and Crew of H.M.S. "Algerine," for the destruction of Pirates at the Tongva Islands, between 2nd and 6th February 1869; voted by Parliament in conformity with Act 13 & 14 Vict., c. 26, and paid to the Naval Prize Account of Her Majesty's Paymaster General, at the Bank of England (including 19 l. 13 s. 4 d. Proctor's Costs repaid out of Naval Votes) - - - - -	719 13 4	4,723 14 11
BOOTY CAPTURED IN PEGU:		
To Balance of portion of Booty captured in Pegu by the Naval and Military Forces in 1852-3, allotted to the Officers and Crews of Her Majesty's Ships, remaining on the 1st April 1876 - - - - -	- - -	900 7 6
Carried forward - - -	£.	54,062 8 10

SALVAGE, and other MONEYS, between the 1st April 1876 and the 31st March 1877—continued.

	£.	s.	d.	£.	s.	d.
Brought forward - - -	-	-	-	14,169	4	5
SALVAGE SERVICES RENDERED BY HER MAJESTY'S SHIPS:						
By Amount distributed and paid out of the Balance and Receipt for Salvage Services, per contra, viz.:—						
Salvage Service rendered to the "Bremensis," by H.M.S. "Flora" -	3	5	8			
Ditto - - ditto - - - "Kim Ho Hin," by H.M.S. "Ocean" -	-	2	7			
Ditto - - ditto - - - "Sea King," by H.M.S. "Wolverene" -	1	6	2			
Ditto - - ditto - - - "Douglas," by H.M.S. "Dwarf" -	3	2	9			
Ditto - - ditto - - - "Vittorio," by H.M.S. "Barracouta" -	-	15	-			
Ditto - - ditto - - - "Killichiena Amelia," by H.M.S. "Trafalgar" -	-	-	4			
Ditto - - ditto - - - "Louisa," by H.M.S. "Spitfire" -	21	1	7			
Ditto - - ditto - - - "Nile," by H.M.S. "Simoom" -	21	8	2			
Ditto - - ditto - - - "Tacora," by H.M.S. "Pylades" -	1	-	10			
Ditto - - ditto - - - "Kromahdah," by H.M.S. "Serapis" -	1	2	7			
Ditto - - ditto - - - "Leith," by H.M.S. "Nimble" -	11	-	8			
Ditto - - ditto - - - "Foo-chow-foo," by H.M.S. "Hornet" -	2	14	4			
Ditto - - ditto - - - "Hai Loong," by H.M.S. "Elk" -	11	11	4			
Ditto - - ditto - - - "Macgregor," by H.M.S. "Pearl" -	7	15	3			
Ditto - - ditto - - - "Puno," by H.M.S. "Ready" -	13	-	11			
Ditto - - ditto - - - "Shannon," by H.M.S. "Dryad" and "Heron" -	594	3	1			
				693	11	3
BOUNTY FOR DESTRUCTION OF PIRATES:						
By Amount distributed and paid out of the Balance and Receipt, per contra, viz.:—						
Pirate Bounty to H.M.S. "Opossum" 29 October 1864 to 17 October 1865 - - - - -	14	4	1			
Ditto - - ditto - "Opossum" 11 to 14 February 1866 - -	11	19	9			
Ditto - - H.M.S. "Osprey" and "Opossum," 18 July 1866 -	6	4	8			
Ditto - - ditto - "Haughty" and "Opossum," 28 August to 2 September 1866 - - -	2	15	7			
Ditto - - ditto - "Haughty" and "Opossum," 17 to 24 September 1866 - - -	-	5	3			
Stores captured by H.M.S. "Rinaldo" from Pirates at Salengore -	-	11	11			
Pirate Bounty to H.M.S. "Nassau," 8 to 11 May 1872 - - -	26	3	5			
Ditto - - ditto - "Algerine," 2 and 6 February 1869 - -	476	13	6			
				538	18	2
BOOTY CAPTURED IN PEGU:						
By Amount distributed and paid out of the Balance, per contra - - -						
				2	10	3
Carried forward - - -	£.			15,404	4	1

## AN ACCOUNT showing the RECEIPT and EXPENDITURE of NAVAL PRIZE, BOUNTY,

	£.	s.	d.	£.	s.	d.
Brought forward - - -	-	-	-	54,062	8	10
BOOTY CAPTURED IN CHINA:						
To Balance of portion of Booty captured at Canton by the Naval and Military Forces, on the 28th and 29th December 1857, awarded to the Naval Squadron, and remaining on the 1st of April 1876 - - - - -	-	-	-	1,160	18	3
GRANT FOR SPECIAL SERVICE ON THE CHINA STATION:						
To Balance of Amount voted by Parliament to the Naval Forces employed on the China Station between the 1st October 1856 and 26th June 1858 (30 days' additional pay), remaining on the 1st April 1876 - - - - -	-	-	-	5,885	4	2
CAPTURES FOR BREACH OF BLOCKADE OF THE CANTON RIVER:						
To Balance of the Net Proceeds of Junks captured by Her Majesty's Ships between the 29th August and 19th December 1857, remaining on the 1st April 1876 - - - - -	-	-	-	1,204	19	1
INDIAN PRIZE MONEY:						
To Balance of shares allotted to the Naval Brigade of Her Majesty's Ship "Shannon," employed at Lucknow during the Indian Mutiny, remaining on the 1st April 1876 - - - - -	312	6	-			
To Balance of shares of the Satassee Booty captured by the Sarun Field Force on the 11th January 1858, allotted to the Naval Brigade of Her Majesty's Ship "Pearl," employed on shore during the Indian Mutiny, remaining on the 1st April 1876 - - - - -	457	8	11			
				769	14	11
GRANT FOR STORES CAPTURED AT KERTCH AND YENIKALE IN 1855:						
To Balance of portion of the Grant of Parliament for Stores captured at Kertch and Yenikale in 1855 by the Naval and Military Forces, allotted to Her Majesty's Ships, remaining on the 1st April 1876 - - - - -	-	-	-	7,124	1	4
CAPTURES AT MAGDALA:						
To Balance of Amount of the shares allotted to the Naval Brigade (Seamen of Her Majesty's Ships "Dryad," "Octavia," and "Satellite") out of the sum of 2,000 <i>l.</i> given by Her Majesty's Government for the Crown and Chalice taken at Magdala, remaining on the 1st April 1876 - - - - -	-	-	-	6	14	10
Carried forward - - - £.				70,214	1	5



ALVAGE, and other MONEYS, between the 1st April 1876 and the 31st March 1877—*continued.*

	£.	s.	d.	£.	s.	d.
Brought forward - - -	-	-	-	15,404	4	1
GRANT FOR SPECIAL SERVICE ON THE CHINA STATION:						
Amount distributed and paid out of the Balance of the Grant of Parliament, per contra - - - - -	-	-	-	1	12	6
CAPTURES FOR BREACH OF BLOCKADE OF THE CANTON RIVER:						
Amount distributed and paid out of the Balance of the Net Proceeds of the Junks, per contra - - - - -	-	-	-	2	1	6
INDIAN PRIZE MONEY:						
Amount distributed and paid out of the Balance, per contra, viz. :—						
To the Naval Brigade of Her Majesty's Ship "Shannon" - - -	2	18	-			
Ditto - - - ditto - - "Pearl" - - -	7	12	-			
				10	10	-
GRANT FOR STORES CAPTURED AT KERTCH AND YENIKALE IN 1855:						
Amount distributed and paid out of the Balance of the Grant of Parliament, per contra - - - - -	-	-	-	7	1	2
Carried forward - - - £.				15,425	9	3

## AN ACCOUNT showing the RECEIPT and EXPENDITURE of NAVAL PRIZE, BOUNTY,

	£.	s.	d.
Brought forward - - -	70,214	1	5
CAPTURES FOR BREACH OF THE FOREIGN ENLISTMENT, MERCHANT SHIPPING, &c. ACTS:			
To Balance of Amounts allotted to the Officers and Crews of Her Majesty's Ships out of the proceeds of the sale of the Cargoes and Vessels captured for breach of the Foreign Enlistment, Merchant Shipping, &c. Acts, remaining on the 1st April 1876 - - - - -			269 19 8
	£.	70,484	1 1

Admiralty, 30 June 1877.

The foregoing Account has been examined with the Books, Vouchers, and other Documents, kept in the Accountant.

Examined, *F. A. Hawker.*

Exchequer and Audit Department.

SALVAGE, and other MONEYS, between the 1st April 1876 and the 31st March 1877—*continued*.

	£.	s.	d.	£.	s.	d.
Brought forward - - -	-	-	-	15,425	9	3
CAPTURES FOR BREACH OF THE FOREIGN ENLISTMENT, MERCHANT SHIPPING, &c. ACTS:						
By Amount paid out of the Balance per contra, viz.:—						
"S. G. Marshall," by H.M.S. "Valorous," 31 July 1870 - - - -	-	7	6			
"Crishna," by H.M.S. "Basilisk," 14 January 1873 - - - -	50	6	11			
"Somboa," or "Tomboa," by H.M.S. "Daphne," 29 June 1873 - -	6	-	11			
				56	15	4
By Balance Account, viz.:—						
Unclaimed Share Account prior to 1st April 1865 - - - -	4,127	14	3			
Government per-centage Account - - - - -	8,616	9	7			
Prize Forfeitures by Desertion, &c. - - - - -	1,637	9	8			
Slave and Tonnage Bounties - - - - -	16,153	14	2			
Salvage Services rendered by Her Majesty's Ships - - - -	3,040	3	1			
Bounty for Destruction of Pirates - - - - -	4,184	16	9			
Booty captured in Pegu - - - - -	897	17	3			
Booty captured in China - - - - -	1,160	18	3			
Grant for Special Service on the China Station - - - - -	5,883	11	8			
Captures for Breach of Blockade of the Canton River - - - -	1,202	17	7			
Indian Prize Money - - - - -	759	4	11			
Grant for Stores captured at Kertch and Yenikale in 1855 - - - -	7,117	-	2			
Captures at Magdala - - - - -	6	14	10			
Captures for Breach of the Foreign Enlistment, Merchant Shipping, &c. Acts -	213	4	4			
(* £.30,000 of this Balance has been transferred to the Consolidated Fund since 1st April 1865, under Section 17 of Act 27 & 28 Vict. c. 24.)						
				*55,001	16	6
				£.	70,484	1 1

*H. Walker,*  
Accountant General of the Navy, and  
Comptroller of Navy Pay.

General's Department at the Admiralty, and the Account is found correct.—Dated this 31st day of July 1877.

*Wm. Dunbar,*  
Comptroller General of the Receipt and Issue of Her Majesty's Exchequer,  
and Auditor General of Public Accounts.

## STATEMENT OF SLAVE AND TONNAGE BOUNTY.

(A.)

DESCRIPTION OF PRIZE.	BY WHAT SHIP CAPTURED.	Date of Capture.	Balance remaining for Distribution or Payment on 1 April 1876.	Proceeds, &c., paid into Naval Prize Account in the Year 1876-77.	TOTAL.	Distributed or Paid in the Year 1876-77.	Balance on 1 April 1877.	When Distributed.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	
1	Forfeited Slave and Tonnage Bounties, 1859-60 (unclaimed)	Detailed in Naval Prize Account for 1869-70, Nos. 1 to 3, page 10, Parliamentary Paper, No. 391 of Session 1870 -	345 17 2	- - -	345 17 2	- - -	345 17 2	Between 1 April 1859 and 31 March 1860.
2	Ditto	- 1860-61 (ditto) -	173 1 4	- - -	173 1 4	- - -	173 1 4	Between 1 April 1860 and 31 March 1861.
3	Ditto	- 1861-62 (ditto) -	195 10 5	- - -	195 10 5	- - -	195 10 5	Between 1 April 1861 and 31 March 1862.
4	Ditto	- 1862-63 (ditto) -	285 14 5	- - -	285 14 5	6 15 7	278 18 10	Between 1 April 1862 and 31 March 1863.
5	Ditto	- 1863-64 (ditto) -	396 13 3	- - -	396 13 3	- - -	396 13 3	Between 1 April 1863 and 31 March 1864.
6	Ditto	- 1864-65 (ditto) -	475 10 5	- - -	475 10 5	3 4	475 7 1	Between 1 April 1864 and 31 March 1865.
7	Ditto	- 1865-66 (ditto) -	692 16 1	- - -	692 16 1	- 11 10	692 4 3	Between 1 April 1865 and 31 March 1866.
8	Ditto	- 1866-67 (ditto) -	124 15 5	- - -	124 15 5	- - -	124 15 5	Between 1 April 1866 and 31 March 1867.
9	Ditto	- 1867-68 (ditto) -	497 16 10	- - -	497 16 10	- - -	497 16 10	Between 1 April 1867 and 31 March 1868.
10	Ditto	- 1868-69 (ditto) -	176 - 7	- - -	176 - 7	5 12 1	170 8 6	Between 1 April 1868 and 31 March 1869.
11	Ditto.	- 1869-70 (ditto) -	557 10 11	- - -	557 10 11	3 13 10	553 17 1	Between 1 April 1869 and 31 March 1870.
12	Ditto	- 1870-71 (ditto) -	313 6 1	- - -	313 6 1	3 4 6	310 1 7	Between 1 April 1870 and 31 March 1871.
13	Eight dhows	- Nymphe -	82 12 3	- - -	82 12 3	- - -	82 12 3	{ 29 Aug. 1871 28 Dec. "
14	Dhow -	- ditto -	10 15 9	- - -	10 15 9	- - -	10 15 9	29 Aug. "
15	Ditto	- ditto -	12 15 1	- - -	12 15 1	- - -	12 15 1	29 Aug. "



16	"Salamates"	Columbine	-	-	26 Feb.	1871	0 18	-	-	-	-	46 12	-	-	-	46 12	-	-	(21 June " 17 June 1873
17	Dhow	Peterel	-	-	11 Feb.	1869	46 12	-	-	-	-	46 12	-	-	-	46 12	-	-	17 June 1873
18	Ditto	Nympha	-	-	12 Jan.	1871	19 16 3	-	-	-	-	19 16 3	-	-	-	19 16 3	-	-	25 June 1872
19	Ditto	Columbine	-	-	22 March	"	3 10 8	-	-	-	-	3 10 8	-	-	-	3 10 8	-	-	13 Aug. "
20	Eight dhows	Star	-	-	13 Nov.	1868	223 5 11	-	-	-	-	223 5 11	-	-	-	223 5 11	-	-	20 Dec. "
21	Dhow	Wolverene	-	-	31 March	1871	8 15 8	-	-	-	-	8 15 8	-	-	-	8 15 8	-	-	10 Jan. 1873
22	Two dhows	ditto	-	-	16 April	"	16 17 9	-	-	-	-	16 17 9	-	-	-	16 17 9	-	-	21 Mar. "
23	Ditto	ditto	-	-	9 to 14 Jan.	1872	6 11 7	-	-	-	-	6 11 7	-	-	-	6 11 7	-	-	25 Mar. "
24	Three dhows	Columbine	-	-	9, 12, & 17 Sept.	1871	25 5 11	-	-	-	-	25 5 11	-	-	-	25 5 11	-	-	31 Mar. "
25	Dhow	ditto	-	-	16 Nov.	1871	6 1 2	-	-	-	-	6 1 2	-	-	-	6 1 2	-	-	31 Mar. "
26	Two dhows	ditto	-	-	13 & 17 Dec.	"	10 16 -	-	-	-	-	10 16 -	-	-	-	10 16 -	-	-	31 Mar. "
27	Dhow	Wolverene	-	-	15 Feb.	1872	2 4 11	-	-	-	-	2 4 11	-	-	-	2 4 11	-	-	6 May "
28	Ditto	Columbine	-	-	14 Sept.	1871	21 5 9	-	-	-	-	21 5 9	-	-	-	21 5 9	-	-	29 Aug. "
29	Ditto	Wolverene	-	-	27 Sept.	1872	24 11 10	-	-	-	-	24 11 10	-	-	-	24 11 10	-	-	19 Sept. "
30	"Yasmeen"	Vulture	-	-	6 Sept.	"	13 17 1	-	-	-	-	13 17 1	-	-	-	13 17 1	-	-	19 Dec. "
31	"Mpagi Mungu"	Briton	-	-	2 Jan.	1873	19 6 -	-	-	-	-	19 6 -	-	-	-	19 6 -	-	-	23 Dec. "
32	Dhow	Dryad	-	-	16 May	1871	40 6 -	-	-	-	-	40 6 -	-	-	-	40 6 -	-	-	16 Jan. 1874
33	"Baraza," and a slave	Magpie	-	-	18 to 20 July	1872	10 18 7	-	-	-	-	10 18 7	-	-	-	10 18 7	-	-	27 Mar. "
34	"Asak'hire"	ditto	-	-	5 October	"	17 14 1	-	-	-	-	17 14 1	-	-	-	17 14 1	-	-	27 Mar. "
35	Dhow	Wolverene	-	-	7 July	1871	34 2 7	-	-	-	-	34 2 7	-	-	-	34 2 7	-	-	30 Mar. "
36	"Mabrook"	Briton	-	-	17 Feb.	1873	19 6 2	-	-	-	-	19 6 2	-	-	-	19 6 2	-	-	30 Mar. "
37	"Wohada Salem" and "Dah Selim"	ditto	-	-	20 March	"	47 2 11	-	-	-	-	47 2 11	-	-	-	47 2 11	-	-	30 Mar. "
38	Dhow	ditto	-	-	21 April	"	36 7 8	-	-	-	-	36 7 8	-	-	-	36 7 8	-	-	26 June "
39	"Fathulheir"	ditto	-	-	14 May	"	15 16 8	-	-	-	-	15 16 8	-	-	-	15 16 8	-	-	26 June "
40	"Hassarah"	ditto	-	-	13 June	"	51 13 -	-	-	-	-	51 13 -	-	-	-	51 13 -	-	-	30 June "
41	"Il Mahmood"	ditto	-	-	22 June	"	62 1 11	-	-	-	-	62 1 11	-	-	-	62 1 11	-	-	30 June "
42	Dhow	Glasgow	-	-	9 Jan.	"	24 - 7	-	-	-	-	24 - 7	-	-	-	24 - 7	-	-	11 Aug. "
43	Three dhows	Magpie	-	-	30 May	1871	83 3 6	-	-	-	-	83 3 6	-	-	-	83 3 6	-	-	14 Aug. "
44	"Metsahal," and two dhows	Nimble	-	-	13 & 18 Aug.	1873	30 6 4	-	-	-	-	30 6 4	-	-	-	30 6 4	-	-	25 Aug. "
45	Dhow	Magpie	-	-	15 May	1872	46 5 8	-	-	-	-	46 5 8	-	-	-	46 5 8	-	-	30 Oct. "
46	Ditto	ditto	-	-	3 June	1873	25 2 8	-	-	-	-	25 2 8	-	-	-	25 2 8	-	-	30 Oct. "
					Carried forward	-	5,336 1 9	-	-	-	-	5,336 1 9	-	-	-	332 2 4	-	-	5,003 19 5

(A).—STATEMENT of Slave and Tonnage Bounty—continued.

DESCRIPTION OF PRIZE.	BY WHAT SHIP CAPTURED.	Date of Capture.	Balance remaining for Distribution or Payment on 1 April 1876.	Proceeds, &c., paid into Naval Prize Account in the Year 1876-77.	TOTAL.	Distributed or Paid in the Year 1876-77.	Balance on 1 April 1877.	When Distributed.
			£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	
		Brought forward - - -	5,336 1 9	- - -	5,336 1 9	332 2 4	5,003 19 5	
47 Dhow - - -	Vulture - - -	22 Oct. 1873	8 5 1	- - -	8 5 1	2 15 -	5 10 1	24 Nov. 1874
48 Ditto - - -	Briton - - -	23 July "	394 14 2	- - -	394 14 2	370 3 3	24 10 11	1 Dec. "
49 "Mambo Komoungo" -	ditto - - -	7 Oct. "	438 - 5	- - -	438 - 5	413 16 1	24 4 4	1 Dec. "
50 Dhow - - -	Columbine - - -	12 April 1872	27 19 7	- - -	27 19 7	5 17 -	22 2 7	8 Dec. "
51 "Kasomba" - - -	Daphne - - -	26 May 1873	37 3 7	- - -	37 3 7	24 16 -	12 7 7	15 Dec. "
52 Dhow - - -	ditto - - -	27 July "	5 5 1	- - -	5 5 1	3 10 3	1 14 10	15 Dec. "
53 Two dhows - - -	ditto - - -	14 August "	13 6 7	- - -	13 6 7	6 19 9	6 6 10	22 Jan. 1875
54 Dhow - - -	ditto - - -	5 Nov. "	2 18 5	- - -	2 18 5	1 19 2	- 19 3	22 Jan. "
55 Ditto - - -	ditto - - -	5 to 14 June "	6 15 8	- - -	6 15 8	3 17 9	2 17 11	5 Mar. "
56 Ditto - - -	Briton - - -	18 Jan. 1874	282 14 -	- - -	282 14 -	264 8 10	18 5 2	16 Mar. "
57 Ditto - - -	Daphne - - -	13 Feb. "	1 14 8	- - -	1 14 8	1 1 2	- 13 6	23 April "
58 "Bandara Salaam" -	ditto - - -	13 Mar. "	79 18 -	- - -	79 18 -	45 13 6	34 4 6	23 April {
59 "Bora Salaam" -	Briton - - -	20 June 1873	172 12 2	- - -	172 12 2	161 11 -	21 1 2	18 June {
60 Dhow - - -	Vulture - - -	26 May 1874	208 9 5	- - -	208 9 5	176 9 5	32 - -	14 May {
61 Ditto - - -	ditto - - -	11 Aug. "	435 12 5	- - -	435 12 5	362 14 6	72 17 11	14 Sept. {
62 Ditto - - -	ditto - - -	11 Sept. "	183 3 7	- - -	183 3 7	153 15 8	29 7 11	26 Oct. {
63 Ditto - - -	Rifleman - - -	14 Sept. "	60 - 7	- - -	60 - 7	53 16 3	6 4 4	26 Oct. {
64 Two dhows - - -	ditto - - -	7 & 8 Dec. "	65 7 11	- - -	65 7 11	61 7 7	4 - 4	26 Nov. {
65 "Salanti" - - -	ditto - - -	29 Dec. "	391 4 3	- - -	391 4 3	368 6 -	22 18 3	30 Nov. {
66 "Chunga Amoina" -	Thetis - - -	23 July "	83 7 9	- - -	83 7 9	21 18 9	61 9 -	7 Dec. {
67 "Puda Mali," and a dhow -	London - - -	2 & 3 Jan. 1875	396 9 7	- - -	396 9 7	367 3 8	29 5 11	8 Feb. 1876
68 "Panga" - - -	ditto - - -	24 Jan. "	103 3 3	- - -	103 3 3	95 13 8	7 9 7	11 Feb. "
69 "Salama," and a dhow -	ditto - - -	24 Feb. "	310 18 -	- - -	310 18 -	289 19 10	20 18 2	7 March "
70 "Mwambo Kwamongo" -	ditto - - -	23 March "	164 19 2	- - -	164 19 2	153 7 6	11 10 8	28 March "
71 "Amanet Ullah" and "Salama" -	Rifleman - - -	8 & 10 Mar. "	1,406 2 9	- - -	1,406 2 9	1,356 16 11	49 6 10	28 March {

72	Dhow	-	-	-	-	653	10	-	-	659	10	-	605	12	5	16 May
73	Ditto	-	-	-	13 June	1874	-	-	-	688	18	-	241	-	8	20 June
74	Ditto	-	-	-	16 July	-	-	-	-	82	6	7	39	-	1	23 June
75	"Tende"	-	-	-	29 Oct.	-	-	-	-	306	-	6	105	6	7	23 June
76	Dhow	-	-	-	25 July	1875	-	-	-	664	4	6	614	17	3	21 July
77	"Sahaleh"	-	-	-	25 July	-	-	-	-	439	19	6	406	12	-	21 July
78	Dhow	-	-	-	28 July	-	-	-	-	35	5	10	31	1	2	26 Sept.
79	One slave, and a dhow	-	-	-	1 Aug.	-	-	-	-	252	10	9	223	2	2	26 Sept.
80	Dhow	-	-	-	4 & 9 Aug.	-	-	-	-	478	12	11	426	11	11	29 Sept.
81	Ditto	-	-	-	10 Aug.	-	-	-	3 4 11	354	1	-	319	4	9	29 Sept.
82	Ditto	-	-	-	14 Aug.	-	-	-	-	1,386	10	-	434	-	-	6 Oct.
83	Ditto	-	-	-	15 May	-	-	-	-	557	1	1	496	5	11	13 Oct.
84	"Asmeen"	-	-	-	7 Sept.	-	-	-	-	967	2	7	312	4	7	21 Nov.
85	Dhow	-	-	-	9 Oct.	-	-	-	-	695	10	2	269	7	6	19 Dec.
86	Three dhows	-	-	-	12 Sept. 1874	-	-	-	-	1,984	6	3	652	13	9	2 Feb. 1877
87	Dhow	-	-	-	28, 29 Jan. & 5 Feb. 1875	-	-	-	-	1,415	-	-	451	10	2	2 Feb.
88	"Kafiri Sham" and "Simesa"	-	-	-	9 Sept.	-	-	-	-	875	10	2	416	2	9	6 Feb.
89	Dhow and "Kasumba"	-	-	-	23 & 24 Oct.	-	-	-	-	398	6	6	193	1	1	6 Feb.
90	Dhow, "Rupia," and "Kallam"	-	-	-	2 & 3 Nov.	-	-	-	-	1,367	13	9	641	2	1	6 Feb.
91	Dhow	-	-	-	18, 19, & 23 Nov.	-	-	-	-	148	10	-	75	6	11	6 Feb.
92	"Salama," and two dhows	-	-	-	8 Dec.	-	-	-	-	1,595	9	7	385	2	9	13 Feb.
93	Dhow	-	-	-	9 & 10 Feb. 1876	-	-	-	-	435	5	6	133	2	3	2 Mar.
94	Ditto	-	-	-	22 Dec. 1875	-	-	-	-	358	2	-	114	18	10	2 Mar.
95	Ditto	-	-	-	14 Jan. 1876	-	-	-	-	246	18	6	77	10	5	16 Mar.
96	"Mansuri," and a slave	-	-	-	21 Jan.	-	-	-	-	402	5	-	131	19	7	16 Mar.
97	"Mambosasa"	-	-	-	28 Jan. & 1 Feb.,	-	-	-	-	146	4	2	44	17	3	27 Mar.
98	Seven slaves and "Chua"	-	-	-	20 Feb.	-	-	-	-	713	4	6	214	16	7	27 Mar.
99	Two slaves and a dhow	-	-	-	1 & 12 Mar.	-	-	-	-	973	2	-	283	19	-	27 Mar.
100	Dhow and "Chunga Mana"	-	-	-	19 & 25 Mar.	-	-	-	-	1,039	10	-	43	2	9	27 Mar.
		-	-	-	6 & 8 April	-	-	-	-	30,127	8	2	13,973	14	-	-
		-	-	-		-	-	-	£.	14,114	10	6	16,153	14	2	16,153 14 2
		-	-	-		-	-	-	£.	30,127	8	2	30,127	8	2	30,127 8 2

H. Walker,  
Accountant General of the Navy, and  
Comptroller of Navy Pay.

NAVAL PRIZE MONEY, &c.

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ACCOUNT showing the RECEIPT and EXPENDITURE of NAVAL PRIZE, BOUNTY, SALVAGE, and other MONIES, between the 1st April 1876 and the 31st March 1877.

(Presented pursuant to Act 27 & 28 Vict. c. 24.)

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*Ordered, by The House of Commons, to be Printed,  
3 August 1877.*

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390.

*Under 2 c2.*



## 695

COPY "of the REPORT on the NAVAL RESERVES by Vice-Admiral Sir *Walter Tarleton*, K.C.B., Admiral Superintendent of Naval Reserves, before resigning Command."

THOS. WOLLEY,  
Chief Clerk.

GENERAL REPORT on the NAVAL RESERVES, by Vice Admiral Sir *Walter Tarleton*, K.C.B., Admiral Superintendent of Naval Reserves, before resigning Command.

I HAVE the honour to submit, for the information of the Lords Commissioners of the Admiralty, the following remarks on the Naval Reserves, together with certain Returns in connection with the forces under my command, viz. :—

- A.—Return of the Average Monthly Attendances of Royal Naval Reserve at Drill.
- B.—The last Monthly Return of Numbers enrolled in the 1st and 2nd Classes of the Royal Naval Reserve.
- C.—The whereabouts of Royal Naval Reserve men now serving Afloat.
- D.—Return of Seaman Pensioner Reserve borne and drilled.

2. A reference to these returns will supply full information respecting the present numerical state of the seamen of the Royal Naval Reserve.

3. As regards the officers of the Royal Naval Reserve, the Order in Council of 1st March 1864 determined that the whole number on the active list should not exceed 700, of the following grades:—

130 Lieutenants.  
270 Sub-Lieutenants.  
100 Engineers, and  
200 Assistant Engineers.

700

4. There are at present on the list—

114 Lieutenants.  
96 Sub-Lieutenants.  
1 Engineer, and  
1 Assistant Engineer.

212

5. By Order in Council of 15th October 1872, the grade of midshipman was added

added, the number not to exceed 200. There are now 99 borne, and from 20 to 25 added yearly from the training ships

6. On the formation of the Royal Naval Reserve, the rank of Lieutenant was given to masters of merchant ships duly qualified, and under 45 years of age, but it was ordered that after 1st January 1865, no person should be eligible for a commission as lieutenant until he had held a commission as sub-lieutenant for one year or upwards; hence all officers joining the Royal Naval Reserve must do so as sub-lieutenant or midshipman.

7. By returns furnished me by the Registrar General of Seamen, I find that of the 114 lieutenants, 59 have failed to comply with the regulations as to drill, viz. :—

6 have taken no drill for 14 years.				5 have taken no drill for 8 years.			
3	"	"	13	6	"	"	7
7	"	"	12	5	"	"	6
9	"	"	11	5	"	"	5
6	"	"	10	2	"	"	4
3	"	"	9	2	"	"	3

8. It has not hitherto been the policy of the Admiralty and Board of Trade to enforce strictly the attendance of these officers at drill, firstly on account of age (49 lieutenants being above 50), and that it was not reasonable to expect gentlemen who had arrived at that time of life to fall in for the first time at a gun.

Secondly, it has been held that in time of peace their services would be more useful in encouraging the enrolment and employment of Royal Naval Reserve seamen, and that the Government would not have obtained their influence had attendance at drill been insisted on at much personal inconvenience during the short interval between their several voyages.

Thirdly, it is anticipated that during war the lieutenants of the Royal Naval Reserve will be employed on transport service, rather than on the quarter-deck of our men-of-war; and, as 55 out of the 114 lieutenants have regularly attended drill, this number would probably suffice for the requirements of the service.

9. The question as regards the drill of officers having recently called for notice in Parliament, and, as in the revision of the Reserve Regulations of 1873, the status of the officers was not disturbed, it appears to me that it may be desirable to look into the question, and to make such changes as shall be thought necessary or expedient.

10. With regard to the drill, I would propose that a symbol E. for efficient should be affixed to the names of those officers who have regularly undergone drill, and obtained from the commander of the drill ship a certificate of efficiency, 1, 2, or 3; or that those officers' names shall be put in italics who have failed to qualify.

That lieutenants who are above 50 years of age be excused drill.

11. That in future, lieutenants, Royal Naval Reserve, who have not been to sea for five years, should be called on by the Registrar General of Seamen to state whether they have relinquished the sea service, informing them that if they do not go afloat again within six months, their names will be removed from the list, and should they afterwards resume a seafaring life, an application to be restored to the active list will be considered. Exception should be made in this respect to officers employed under the Board of Trade.

12. That the drill of sub-lieutenants and midshipmen be strictly enforced, unless, on satisfactory explanation, it is shown that it would materially interfere with the officer's employment.

13. With regard to age, there is at present no limit fixed, and there are 14 officers now on the list of lieutenants above 55.

If the names of officers above 55 years of age are allowed to remain on the active list, it is apparent that the number (130), as limited by Order in Council, will soon be reached, and there can be no advancement from the sub-lieutenants.

Lieutenants in the Royal Navy must retire at 45. If lieutenants, Royal Naval

Naval Reserve, are allowed an additional 10 years, in consideration that there are no higher grades for them to attain to, I think it would meet the question, and their names should be removed from the active to the honorary list.

This list would have to be made an open one. At present it is limited to 100 for lieutenants and sub-lieutenants, and there are now on it 97.

I should prefer the honorary to a retired list, as I think it would be more acceptable to the officers, and no difficulty would arise with regard to ships flying the blue ensign whose commander was over 55 years of age.

#### *Sub-Lieutenants.*

14. Of the 96 sub-lieutenants on the active list, 44 have not complied with the regulations as to drill, viz.:—

4 have not drilled for 14 years.				2 have not drilled for 8 years.			
4	"	13	"	2	"	7	"
3	"	12	"	4	"	6	"
5	"	11	"	1	"	5	"
5	"	10	"	7	"	4	"
1	"	9	"	6	"	3	"

I am of opinion that compulsory drill should not be called for from sub-lieutenants above the age of 45; that for officers under that age explanation should be required for non-performance of drill, and that if not satisfactory, and that the officer fails afterwards to attend, his name should be removed from the list.

That the limit of age for sub-lieutenants should be 50, and on arriving at that age their names should be transferred to the honorary list.

Also that sub-lieutenants who have not been at sea for five years should be called on to state whether they have relinquished the sea service, informing them, as in the case with lieutenants, that unless they are employed under the Board of Trade, or resume the sea service within 12 months, it will be assumed that they have quitted the sea service, and that their names will be removed from the list, and should they afterwards return to service at sea, their application to be restored will be considered.

#### *Midshipmen.*

15. These obtain an excellent education on board the mercantile training ships, and are very favourably reported on by the masters of sea-going ships.

The introduction of these carefully instructed young gentlemen to the mercantile marine cannot fail to have a most beneficial influence, and they will make efficient officers in the Royal Naval Reserve.

16. As the Order in Council creating the grade of midshipmen, Royal Naval Reserve, was issued in 1872, the question will soon arise as to when they are to be advanced to sub-lieutenants, and under what regulation, there being nothing in the Order in Council to determine this.

The present qualifications for sub-lieutenants require the candidate to have served as master or chief mate in vessels of not less than 500 tons, for not less than two years.

17. I would propose, in consideration of the education these young gentlemen have received, that the regulations be relaxed in their favour, and that they should be considered eligible for advancement under the following terms:—

- A.—To produce certificates of very good conduct for four years' sea service.
- B.—To have regularly undergone drill since his appointment as midshipman.
- C.—To produce a certificate from one of the commanders of a drill ship as to his efficiency, and that he is capable of drilling a party of men at great gun, sword, and rifle drill.
- D.—To pass the Board of Trade for mate, and to have served as junior mate for one year.

Subject to these conditions, to be eligible for a sub-lieutenant's commission at 22 years of age.

A similar rule to be applied to midshipmen as to sub-lieutenants with regard to sea service. The names of those who have not been at sea for one year to be removed from the list.



*Engineers.*

18. No effort has been hitherto made to attract this class of officers to the Royal Naval Reserve.

No drill is required from them, and their entry would be a mere nominal enrolment, with the privilege of wearing a uniform.

I do not consider it a subject of any importance, as the junior men only would be useful in case of emergency to act under the naval engineer.

Many steamers would be thrown out of employ in war time, or if taken up by the Government, would bring their own engine-room complement.

*Surgeons.*

19. There would doubtless be a great demand for medical officers in the event of war, and I think it worthy of consideration whether the medical officers in the mercantile navy should not be invited to join the Royal Naval Reserve, with the permission to wear the uniform of surgeons, and receive a small fee, say 2s. a month, for each Royal Naval Reserve seaman under their medical care on board the ship they are serving in.

*Seamen, 1st Class, Royal Naval Reserve.*

20. The regulations for the enrolment and drill of these men are working smoothly, and require no further revision.

The grant of a suit of naval clothing on enrolment and re-enrolment has given great satisfaction, and has tended much towards uniformity of dress amongst the Reserve generally.

It would appear that we possess nearly all the A.B.'s in the Mercantile Marine that comply with the conditions laid down. The number floats between 12 and 13,000 men, and the entries about keep pace with the discharges.

If greater facilities were given for drill, some few more men might be obtained, but at an additional expense, and taking into consideration that the complement of seamen in our largest ships is not more than 300, the 13,000 Royal Naval Reserve would appear to be a sufficient number for the country to maintain in peace, looking forward to the large amount that will be paid in pensions of 12 *l.* a-year to the 1st class Royal Naval Reserve when they reach the age of 60, or are disabled from obtaining a livelihood, in addition to the pay and retainers paid to them on the active list.

*Seamen, 2nd Class, Royal Naval Reserve.*

21. These number 5,500, and could be doubled if thought desirable, but as they are chiefly fishermen, unacquainted with square-rigged vessels, and unaccustomed to long absence from their homes, 6,000 may be considered sufficient for the work they would chiefly have to perform in gun-boats, torpedo vessels, and coast defence ships.

Their pay is less than that of the 1st class, and they have no claim for pension.

In Scotland, and specially in the Shetlands, the 2nd class serve as a stepping stone to the first, while the majority being young men, they receive instruction more readily, and will in the end be better trained.

*Boys, 3rd Class, Royal Naval Reserve.*

22. The establishment of a 3rd class Royal Naval Reserve has not as yet made much advance.

The regulations provide all that is necessary for its formation, but they have been long under consideration by the Admiralty and Board of Trade, and as it is optional on the part of the committees of the mercantile training ships to accept them now they are issued, it is to be feared that further delay will take place before the scheme is fairly launched, and it may be found necessary for the admiral superintendent, or other officer appointed by the Admiralty, to confer with the several committees and deal with the question locally before it is put on a satisfactory footing.



*General Remarks.*

23. On a review of the Act for the establishment of a Reserve Volunteer Force of seamen passed in August 1859, and the state of the Reserves at the present time, 17 years afterwards, I think it must be admitted that it has fulfilled the intention of its framers. It was given to them to solve a question which had always been a vexed one and a source of anxiety to the country, viz., how to man our ships in the event of any sudden increase to our navy, and to provide a sufficiency of seamen to carry on naval operations when war was declared, while the men so employed should be absorbed on the conclusion of peace in the mercantile marine.

24. The difficulties found in obtaining men on the breaking out of the war with Russia made a deep impression, and the resolution was taken not again to be placed in so defenceless a position, but there were many points which had to be considered before a scheme could be produced, the machinery of which should work.

25. The service of the seamen was to be voluntary, as conscription in this country could not be enforced, and the rude method of impressment would not be tolerated.

One of the evils of that mode of raising men had been to create an almost insurmountable prejudice in the merchant seamen against the Royal Navy; they had also a dislike to drill, or soldiering as they called it, of any kind.

They were actively employed in voyages to all parts of the world.

In the face of these difficulties, it was a bold measure to make it lawful for the Admiralty to raise and keep up a number of men not to exceed 30,000 from the merchant service.

26. Again, the interest of the shipowners at first sight would appear to be opposed to the scheme, as it would deprive them in time of peace of the services of their servants for 28 days in each year, and altogether, should the men be required for the navy in time of war.

27. The practical working of the Act has shown that in peace time at least, the shipowners have suffered no inconvenience.

The men are permitted to take their drill whenever it best suits them, and at periods of 7, 14, 21, and 28 days, while on the other hand the qualifications insisted on on enrolment and the medical examination, are guarantees for the character and ability of the Royal Naval Reserve man. The retainers which he receives and the prospect of pension operate as inducements to steadiness and against desertion, and altogether have a beneficial effect on the whole mercantile marine, so that the shipowners now give a preference to Royal Naval Reserve men whenever they can get them.

28. The prejudices of the seamen have been much worn down by mixing with men-of-war's men, when under instruction.

The considerate treatment of the officers, and a month's discipline out of the year, have also had a marked effect, and I have seen bodies of Royal Naval Reserve march and go through all the exercises with as much steadiness as a well-trained crew of men-of-war's men.

The result is, that there are now enrolled in both classes nearly 20,000 out of the 30,000 sanctioned by the Act.

29. The vital question is whether, after all the expense the country has been put to, and will have to bear prospectively, for the organisation and maintenance of the Royal Naval Reserve, will the men be forthcoming when they are wanted?

This can be tested only in the day of trial, when the Queen's Proclamation shall call the Reserve out for active service; but I hold that we have as reliable guarantees that the men will present themselves, as under any system that could be devised on the basis of voluntary service.

The men have entered on an engagement to serve, they have received drill pay and retainers under this engagement, and, without being branded by public opinion, could not shrink from the fulfilment of their duty. As a fact, a great impetus was given to enrolment when the "Trent" affair pointed to possible hostilities with the United States.

30. It would be doing an injustice to the *élite* of the merchant service to suppose that they are entirely devoid of patriotism, and would not desire to serve in defence of their country.

Their prejudices against service in the Royal Navy have been in a great measure removed, and they would feel themselves competent from previous training to work the guns and handle a rifle and cutlass.

31. On the other hand, should any reluctance be shown by the men, there are many ways by which the Government could enforce their service.

The whereabouts of the Royal Naval Reserve, both at home and abroad, is carefully registered; the men at home could be taken hold of and brought to the nearest ship bearing the pendant, and draughted where required. Men abroad could be taken out of their ship by any man-of-war they might fall in with.

On arrival of any ship coming from abroad in which it was known Royal Naval Reserve are serving, a boat from the nearest man-of-war could board her and take only the Royal Naval Reserve men.

The men forfeit all claims to pension or future pay who fail to comply with the call.

Lastly, they are liable to be treated as deserters, and to incur all the penalty attached to that offence, should they fail to appear when called out.

32. It has been proposed at different times to call out the Royal Naval Reserve as a rehearsal, and as a means of ascertaining what number could be embarked on short notice, also to accustom them to service in men-of-war. As a test of numbers I consider the attempt made some years ago to embark a portion afforded no reliable data.

By dint of agitation at the northern ports, a certain number of volunteers were collected, but as it was entirely optional with them to go or stay, the majority were not willing to give up the employment in which they were engaged.

33. I can understand that under certain circumstances it might be desirable policy for the Government to embark the Royal Naval Reserve in Her Majesty's ships, but in such a case I am of opinion that no option should be given to the men.

The Admiralty should order their embarkation under Clause III., and the men should be subject to the penalty declared in Clause XX. of the Royal Naval Reserve Act, 22 & 23 Vict. cap. 40, if they did not attend.

34. As to the importance of embarking the men to accustom them to service in a man-of-war, I think this has been over-rated, so far as the 1st class are concerned. These men are seamen, and do not require instruction in seamanship. They are not used to move aloft with the same alacrity as men-of-war's men, but this is a small matter.

What the merchant seaman requires is to be made familiar with the great gun exercise, and to handle the sword and rifle—to be steady and silent under instruction, and to obey implicitly the orders he receives.

This training he will receive on board the drill ship especially set apart for this service, or at the batteries representing a section of a ship, better than on board of a man-of-war, where his teaching interferes with the routine of the ship, and where he is surrounded by matters to take off his attention, and is looked upon as an intruder by the ship's company.

In most cases where the men have been drilled in the district ships the result has not been satisfactory, and there has been a difficulty in embarking or disembarking them, or providing for their instruction in the ship's occasional absence.

#### *Coast Guard on Shore.*

35. As this force is governed in strict accordance with the regulations, it is unnecessary for me to remark further than that I have the satisfaction of feeling I leave it in a thoroughly efficient state, and that the conduct of both officers and men while under my command has been, as a rule, exemplary.

I have visited every coast guard station in Great Britain, and have seen the men under arms go through their rifle and cutlass exercise.

My notes on the buildings have been sent to the Director of Works.

Time has not permitted me to inspect the force in Ireland.



*Coast Guard Cruisers.*

36. With respect to the cruisers I would remark that no new vessels have been laid down since 1868, and that a large reduction in the number of this class took place in 1869 and 1870.

I submit that money may be taken in the next estimate for building a steam cruiser on the lines of the Hawk. I have had considerable experience of the performance of this vessel in all weathers, and for coast guard purposes I am of opinion it would be found difficult to improve on her.

I have already addressed their Lordships on the desirability of employing steamers rather than sailing vessels in the removal and embarkation of the men, and as being better adapted to the protection of the fisheries.

The establishment of cruisers having been so reduced, the gun-boats would be required in addition to those vessels, for which there will still be abundant work in the protection of the revenue, conveyance of stores and men for short distances, &c.

*Seamen Pensioner Reserve.*

37. Of the Seaman Pensioner Reserve, it will be seen that there are 511 enrolled.

This addition to the Naval Reserve was originated in 1870, and the then Board of Admiralty anticipated that the majority of men discharged on pension, and who were under 45 years of age, would join.

The regulations first insisted on a month's training on board a man-of-war every alternate year, but finding that the men did not come forward, this rule was relaxed in May 1873, and the pensioners of the Reserve are now permitted to take 14 days' drill annually on boarding any man-of-war, drill ship, or Royal Naval Reserve battery.

Notwithstanding this arrangement to suit their convenience, a comparatively small number appears for drill, viz., 511 out of 2,800 pensioners under 50 years of age. It may be assumed, therefore, that their employment prevents their attendance.

As the Admiralty possess the power of calling the pensioners out should their services be required, it is only to keep them efficient in their several exercises that is gained at the expense of their maintenance while under teaching, and as it cannot be supposed that the men would readily forget the training of 20 years, I attach little importance to the fact of their not responding to the terms of the circular.

*Royal Naval Artillery Volunteers.*

38. I attach the last returns showing the strength of this force.

The London brigade has shown much zeal and perseverance in acquiring a knowledge of the gun drill and small arms, and they have cheerfully submitted to privation and discomfort in going out in a gun-boat.

I attach the Report of the lieutenant commanding the gun-boat on the last cruise.

I am of opinion that they would be found useful in the event of war in the defence of the estuaries, while in peace they serve as a connecting link between the Volunteer movement and the Royal Navy.

The Liverpool brigade is increasing in number and efficiency under a new commanding officer and instructor.

At Bristol the movement has never been popular, and unless more energy is shown, and more volunteers enrol, it seems questionable whether the expense of maintaining the staff of instructors should be continued.

An intimation to this effect to the commanding officer might stimulate further exertion.

*J. W. Tarleton,*

Vice Admiral Superintendent Naval Reserve.

To the Secretary of the Admiral

A. - - - - -

A RETURN of the Daily Average Number of ROYAL NAVAL RESERVE MEN on Drill, the Total Number

DISTRICT.	SHIP OR BATTERY.	AVERAGE DAILY ATTENDANCE. - - -																	
		1875.																	
		July.			August.			September.			October.			November.			December.		
		1st Class.	2nd Class.	TOTAL.	1st Class.	2nd Class.	TOTAL.	1st Class.	2nd Class.	TOTAL.	1st Class.	2nd Class.	TOTAL.	1st Class.	2nd Class.	TOTAL.	1st Class.	2nd Class.	TOTAL.
Hull - - -	Dauntless (Hull) - -	17	2	19	14	5	19	5	5	10	6	4	10	6	4	10	26	4	30
	Castor (North Shields) - -	30	1	31	20	1	21	29	3	32	36	4	40	38	3	41	76	10	86
	Durham (Sunderland) - -	23	-	23	22	1	23	33	1	34	33	-	33	24	-	24	49	1	50
	Trincomalee (Hartlepool) - -	12	2	14	4	1	5	8	3	11	14	1	15	16	-	16	40	1	41
	Seaham Harbour - - -	11	1	12	9	-	9	10	-	10	10	-	10	11	1	12	18	1	19
	Scarborough - - -	11	10	21	3	5	8	5	1	6	9	1	10	14	3	17	21	3	24
	Lynn - - -	11	2	13	5	-	5	3	2	5	6	4	10	10	6	16	17	7	24
Harwich - - -	Penelope (Harwich) - -	On summer cruise					-	-	5	-	5	7	1	8	4	1	5	6	7
	President (London) - -	62	1	63	52	1	53	50	2	52	51	1	52	44	1	45	80	4	84
	N. Yarmouth - - -	36	4	40	22	3	25	12	1	13	11	1	12	10	1	11	23	3	26
	Seasalter Cliff - - -	18	4	22	16	2	18	11	2	13	21	3	24	9	2	11	23	4	27
Newhaven - - -	Hector (Southampton) - -	13	1	14	Summer cruise			28	1	29	54	3	57	43	2	45	50	1	51
	Southsea - - -	19	1	20	22	2	24	29	3	32	25	2	25	23	1	24	17	1	18
	Blatchington - - -	11	2	13	4	1	5	3	1	4	6	-	6	4	1	5	16	3	19
Weymouth - - -	Warrior (Portland) - -	1	-	1	Summer cruise			1	-	1	5	1	6	3	1	4	8	3	11
	Poole - - -	5	2	7	3	-	3	10	1	11	16	1	17	13	-	13	15	3	18
	Exmouth - - -	11	1	12	7	-	7	9	4	13	18	5	23	13	3	16	25	9	34
	Brixham - - -	13	3	16	8	3	11	9	4	13	14	3	17	25	6	31	10	9	19
	Stonehouse - - -	26	2	28	22	2	24	18	1	19	31	3	34	29	3	32	47	6	53
	Fowey - - -	8	1	9	10	2	12	8	1	9	10	5	15	16	7	23	18	10	28
	Falmouth - - -	7	1	8	6	1	7	6	1	7	8	1	9	8	2	10	41	12	53
	Penzance - - -	7	1	8	10	1	11	10	-	10	12	4	16	20	13	33	25	16	41
Liverpool - - -	Eagle (Liverpool) - -	67	4	71	57	6	63	64	8	72	79	8	87	61	5	66	129	12	141
	Dædalus (Bristol) - -	32	2	34	24	4	28	23	-	23	37	-	37	30	3	33	41	6	47
	Pater - - -	20	3	23	8	1	9	11	-	11	10	4	14	10	1	11	6	6	12
	St. Dogmaels - - -	7	1	8	4	1	5	5	1	6	9	1	10	13	4	17	18	7	25
	Carnarvon - - -	17	4	21	15	2	17	16	2	18	17	3	20	23	4	27	36	2	38
	Fleetwood - - -	4	5	9	3	1	4	-	2	2	2	1	3	4	2	6	5	1	6
	Maryport - - -	12	2	14	8	-	8	12	1	13	13	1	14	15	-	15	30	4	34
Leith - - -	Favorite (Queensferry) - -	1	-	1	-	-	-	2	1	3	12	5	17	14	6	20	28	11	39
	Unicorn (Dundee) - - -	23	-	23	22	5	27	33	6	39	47	3	50	40	16	56	132	10	142
	Clyde (Aberdeen) - - -	30	1	31	16	1	17	27	46	73	45	91	136	50	43	93	93	91	184
	Netley Gunboat (Inverness) - -	-	-	-	-	-	-	-	-	-	3	33	36	7	79	86	13	177	190
	Lerwick - - -	-	-	-	-	-	-	-	-	-	19	17	36	53	57	110	92	118	210
	Peterhead - - -	-	-	-	-	-	-	-	-	-	11	3	14	18	17	35	52	14	66
Clyde - - -	Aurora (Greenock) - -	20	1	21	23	1	24	25	6	31	32	9	41	27	8	35	42	15	57
	Flirt Gunboat (Stornoway) - -	-	-	-	-	-	-	-	-	-	1	39	40	3	126	129	4	125	129
												(From 4th Oct.)							
Kingstown - - -	Vanguard to 30th September 1875, Iron Duke from 1st October 1875 (Kingstown).	7	-	7	7	-	7	7	-	7	6	-	6	5	-	5	7	1	8
	Larne - - -	7	-	7	4	-	4	5	-	5	7	-	7	8	1	9	13	2	15
	Rosslare - - -	9	1	10	8	2	10	7	1	8	12	5	17	6	2	8	7	17	24
	Tramore - - -	3	1	4	2	-	2	3	-	3	3	5	8	3	3	6	4	6	10
	Upper Cove - - -	11	14	25	6	21	27	17	39	56	40	49	89	44	54	98	30	90	120
Limerick - - -	Valiant (Foynes) - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Fair Hill (Galway) - - -	1	2	3	1	10	11	2	15	17	1	10	11	2	18	20	1	8	9



A.

Drilled, and the Number of Enrolments and Re-enrolments, from 1st July 1875, to 30th June 1876.

AVERAGE DAILY ATTENDANCE.																		Total Number who attended Drill during the Year.			Number of Enrolments and Re-enrolments.		
1 8 7 6.																							
January.			February.			March.			April.			May.			June.			1st Class.	2nd Class.	TOTAL.	1st Class.	2nd Class.	TOTAL.
1st Class.	2nd Class.	TOTAL.	1st Class.	2nd Class.	TOTAL.	1st Class.	2nd Class.	TOTAL.	1st Class.	2nd Class.	TOTAL.	1st Class.	2nd Class.	TOTAL.	1st Class.	2nd Class.	TOTAL.						
45	5	50	38	2	40	28	2	30	39	1	40	8	2	10	19	2	21	341	20	361	29	-	29
90	6	96	60	15	75	48	10	58	50	3	53	32	4	36	34	1	35	622	108	730	168	16	184
50	1	51	50	-	50	39	-	39	29	1	30	18	-	18	15	-	15	484	6	490	73	1	74
49	2	51	37	3	40	29	4	33	19	1	20	7	2	9	8	2	10	304	18	322	73	16	89
13	-	13	10	-	10	10	1	11	16	1	17	7	2	9	6	-	6	160	11	171	33	11	44
28	5	33	11	2	13	9	7	16	9	6	15	2	3	5	7	14	21	129	60	189	11	5	16
22	6	28	23	12	35	13	17	30	5	4	9	6	3	9	12	2	14	151	78	229	16	11	27
9	2	11	8	3	11	9	2	11	5	3	8	4	2	6	2	-	2	59	15	74	18	3	21
80	5	85	62	1	63	71	1	72	65	2	67	39	1	40	50	2	52	1,891	38	1,929	97	3	100
54	2	56	41	5	46	41	5	46	28	6	34	16	10	26	25	6	31	339	45	384	21	8	29
20	2	22	17	1	18	17	2	19	15	3	18	12	2	14	16	3	19	195	30	225	41	16	57
29	2	31	27	1	28	41	5	46	35	4	39	25	2	27	28	1	29	373	23	396	33	10	43
18	2	20	25	2	27	24	3	27	25	1	26	22	2	24	19	1	20	426	40	466	45	11	56
7	13	20	12	11	23	10	5	15	11	3	14	5	1	6	4	4	8	145	65	210	13	6	19
5	1	6	1	1	2	4	2	6	4	-	4	-	-	-	-	-	-	42	8	50	2	3	5
24	6	30	30	4	34	26	5	31	14	7	21	13	5	18	5	1	6	254	55	309	27	12	39
61	29	90	51	22	73	34	13	47	24	5	29	17	6	23	9	3	12	317	101	418	29	7	36
13	14	27	17	35	52	22	24	46	19	10	29	17	4	21	19	4	23	208	125	433	24	53	77
60	10	70	46	10	56	60	7	67	38	8	46	43	5	48	32	4	36	504	81	585	59	15	74
44	23	67	35	21	56	18	3	21	19	2	21	12	2	14	12	1	13	226	88	314	29	10	39
35	15	50	23	5	28	16	3	19	15	3	18	20	2	22	12	2	14	246	76	322	35	20	55
76	40	116	25	30	55	10	3	13	9	1	10	8	1	9	10	1	11	225	110	335	30	20	50
143	16	159	111	10	121	107	14	121	88	8	96	81	8	89	86	6	92	1,550	196	1,746	247	30	277
49	6	55	52	5	57	45	8	53	34	5	39	33	4	37	41	5	46	692	67	759	79	22	101
25	2	27	11	9	20	14	6	20	16	2	18	10	-	10	17	3	20	157	37	194	19	8	27
32	7	39	25	3	28	12	1	13	10	2	12	10	1	11	12	1	13	186	27	213	37	18	55
51	8	59	45	3	48	41	4	45	35	3	38	38	3	41	17	2	19	404	40	444	56	12	68
3	2	5	3	1	4	6	-	6	9	2	11	3	4	7	5	1	6	55	43	98	28	10	38
28	3	31	12	2	14	13	1	14	22	2	24	19	1	20	16	2	18	217	14	231	58	1	59
28	9	37	31	5	36	13	2	15	9	2	11	9	2	11	2	-	2	185	59	244	44	22	66
11	11	122	69	1	70	49	8	57	36	4	40	37	-	37	30	-	30	1,151	98	1,249	132	27	159
98	45	143	65	30	95	49	27	76	30	5	35	22	4	26	24	7	31	657	478	1,135	85	53	138
16	211	227	6	160	166	6	33	39	3	8	11	-	-	-	4	-	4	77	806	883	7	2	9
94	129	223	56	98	154	10	12	22	-	-	-	-	-	-	-	-	-	507	566	1,073	58	98	156
71	17	88	40	9	49	10	3	13	7	2	9	-	-	-	-	-	-	209	65	274	27	11	38
38	20	58	26	13	39	29	10	39	22	2	24	15	3	18	22	3	25	321	91	412	52	17	69
9	120	129	13	132	145	2	112	114	1	30	40	-	-	-	-	-	-	33	693	726	7	165	172
To 15th April.																							
12	1	13	8	1	9	8	1	9	5	3	8	8	1	9	5	1	6	86	10	96	-	-	-
17	3	20	10	1	11	14	4	18	11	3	14	5	1	6	7	-	7	141	16	157	32	10	42
7	34	41	8	22	30	5	11	16	5	6	11	7	3	10	6	4	10	154	131	285	14	38	52
4	6	10	5	8	13	5	8	13	6	4	10	5	1	6	5	3	8	38	34	72	9	21	30
37	56	93	34	34	68	18	17	35	15	15	30	12	14	26	15	14	29	279	488	767	51	104	155
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	2	6	-	-	-
-	8	9	2	4	6	2	4	6	-	1	1	-	6	6	1	1	2	25	93	118	1	14	15

## B.

## ROYAL NAVAL RESERVE.

RETURN showing the Number of SEAMEN Enrolled, Number Drilled, their Whereabouts, &c.,  
Quarter ended 30th September 1876.

		First Class.	Second Class.	TOTALS.
NUMBER OF SEAMEN WHO HAVE APPLIED TO BE ENROLLED	- - - - -	40,843	6,804	47,647
Deduct—				
Rejections for physical or professional incapacity	First. 5,194 Second. 683			
Claims accepted, but certificates R.V. 2 not applied for	568			
Claims outstanding and under consideration	67 46			
		5,829	729	6,558
NUMBER OF MEN ENROLLED	- - - - -	35,014	6,075	41,089
Deduct Men who have—				
Been discharged	First. 3,617 Second. 183			
Died	3,899 107			
Joined the Royal Navy	694 36			
Not applied to be re-enrolled	14,247 1			
Been promoted from second to first class	- 310			
		22,457	637	23,094
ACTUAL STRENGTH OF THE FORCE	- - - - -	12,557	5,438	17,995

AGES.	First Class.	Second Class.	TOTALS.	
From 20 to 25 years	2,495	3,790	6,285	In the first class there are men with—
„ 26 to 30 „	4,002	1,302	5,304	Master's certificate of competency - - - 75
„ 31 to 35 „	3,010	346	3,356	Mate's - ditto - ditto - - - 651
„ 36 to 40 „	1,917	-	1,917	Master's certificates of service - - -
Above 40 years	1,133	-	1,133	Mate's - ditto - ditto - - - 5
				P. O. ratings in the merchant service - - - 4,363
	12,557	5,438	17,995	TOTAL NUMBER DRILLED.
				First class - - - - - 11,990
				Second class - - - - - 5,161
Average Age	yrs. mo. 31 1	yrs. mos. 24 10	yrs. mos. 29 2	TOTAL - - - 17,141

## WHEREABOUTS.

	First Class.	Second Class.	TOTALS.	
Estimated to be in the coasting trade and at home	- - - - -	4,533	4,150	8,683
On leave—				Who are expected home—
For long voyages	281	60	341	Within 1st month - - - 6,117
For short „	7,285	1,155	8,440	„ 2nd „ - - - 335
			8,781	„ 3rd „ - - - 447
				„ 4th „ - - - 168
				„ 6th „ - - - 218
				„ 12th „ - - - 281
Men eft abroad on account of sickness, desertion, &c.	- - - - -	458	73	531
				TOTAL - - - 12,557
				5,438
				17,995

The work of the quarter may be shortly stated as under:

	First.	Second.	TOTAL.
Applications received	189	108	297
Actually enrolled during quarter	162	85	247
Discharged, term expired, &c.	221	108	329
Net Decrease for the Quarter			82

## C.

## ROYAL NAVAL RESERVE.

RETURN showing the Number of MEN actually Serving in the ROYAL NAVAL RESERVE on 30th September 1876, their Whereabouts, &c.; distinguishing the Stations to which those Employed in Foreign-going Ships have Sailed.

STATIONS.	Number of Men.		TOTALS.	
	1st Class.	2nd Class.	1st Class.	2nd Class.
Baltic and North Sea - - - - -	1,505	187		
France, Spain, and Portugal - - - - -	505	71		
Mediterranean and Black Sea - - - - -	1,358	169		
British North America - - - - -	1,119	287		
United States of America - - - - -	624	70		
West Indies - - - - -	339	62		
Brazils - - - - -	435	85		
Pacific - - - - -	275	64		
West Coast of Africa and Cape - - - - -	330	56		
East Indies - - - - -	652	109		
China and Japan - - - - -	94	11		
Australia and New Zealand - - - - -	330	44		
Total Employed as Above - - - - -			7,566	1,215
Deserted and Discharged abroad - - - - -			458	73
In the Coasting Trade and at Home - - - - -			4,533	4,150
Present Actual Strength - - - - -			12,557	5,438

3 October 1876.

Allen Stoneham,  
Registrar General of Shipping and Seamen.

## D.

## SEAMEN PENSIONER RESERVE.

RETURN of the Number of MEN of the SEAMAN PENSIONER RESERVE in the several COAST GUARD DISTRICTS whose Names were on the Register on 30th June 1876, and who had taken their Drill during the Year ended 30th June 1876.

DISTRICT.	Number.
Leith - - - - -	3
Hull - - - - -	7
Harwich - - - - -	20
Newhaven - - - - -	38
Weymouth - - - - -	390
Liverpool - - - - -	45
Clyde - - - - -	5
Kingstown - - - - -	3
Limerick - - - - -	0
TOTAL - - - - -	511

## ROYAL NAVAL ARTILLERY VOLUNTEERS.

## LONDON BRIGADE.

Head Quarters at 35A, Great George-street, Westminster.

30 September 1876.

Staff of Brigade.								Enrolled Strength of each Corps.							
	Lieutenant Instructor.	Petty Officer Instructor.	Officer in Charge of "Rainbow."	Surgeons.	Bugle Majors.	Armourers.	Shipkeepers, H. M. G. B. "Rainbow."	Lieutenant.	Sub-Lieutenant.	Chief Petty Officer.	1st Class Petty Officer.	2nd Class Petty Officer.	Leading Gunner.	Gunner.	Bugler.
TOTAL - -	1	5	1	5	0	0	3								
<i>Name and Head Quarters of each Corps.</i>															
1st London - - - - -								2	5	5	8	7	10	215	4
(35, Great George-street, Westminster.)															
2nd Brighton - - - - -								0	1	1	2	2	3	40	2
(Coast Guard Watch Room, Brighton.)															
3rd Hastings - - - - -								0	1	1	2	2	0	53	2
(Coast Guard Watch Room, Hastings.)															
TOTAL - - -								2	7	7	12	11	13	308	8
Establishment, Maximum - - - - -								2	8	8	16	16	32	531	61

*Alterations since last Return, dated 30th June 1876.*

	Enrolled Volunteers.
Total Enrolled Strength on the 1st of last Quarter - - - - -	832
Add, Gunners - - - - -	15
TOTAL - - -	397
Deduct, Gunners - - - - -	14
Total Enrolled Strength remaining - - - - -	383



ROYAL NAVAL ARTILLERY VOLUNTEERS.

LIVERPOOL BRIGADE.

Head Quarters at Liverpool.

30 September 1876.

Staff of Brigade.						Enrolled Strength of each Corps.							
	Lieutenant Instructor.	Petty Officer Instructor.	Surgeons.	Bugle Majors.	Armourer.	Lieutenant.	Sub-Lieutenant.	Chief Petty Officer.	1st Class Petty Officer.	2nd Class Petty Officer.	Leading Gunner.	Gunner.	Engler.
TOTAL - - -	1	3	-	-	1	1	4	4	8	8	8	168	4
Name and Head Quarters of each Corps.													
1st Liverpool Corps - - - - -													
TOTAL - - -						1	4	4	8	8	8	168	4
Establishment, Maximum - - - - -						1	4	4	8	8	8	275	4

Alterations since last Return, dated										1876.	Enrolled Volunteers.
Total Enrolled Strength on the 1st of last Quarter - - - - -											197
Add, Gunners - - - - -											23
TOTAL - - -											220
Deduct, Gunners - - - - -											15
Total Enrolled Strength remaining - - - - -											205

## ROYAL NAVAL ARTILLERY VOLUNTEERS.

## BRISTOL BRIGADE.

Head Quarters at Athenæum, Bristol.

1 October 1876.

Staff of Brigade.						Enrolled Strength of each Corps.							
	Lieutenant Instructor.	Petty Officer Instructor.	Surgeon.	Bugle Majors.	Armourer.	Lieutenant.	Sub-Lieutenant.	Chief Petty Officer.	1st Class Petty Officer.	2nd Class Petty Officer.	Leading Gunner.	Gunner.	Bugler.
TOTAL - - -	1	1	1	-	1								
<i>Name and Head Quarters of each Corps.</i>													
1st Bristol Athenæum - - - - -						1	1	-	2	2	2	55	2
TOTAL - - -						1	1	-	2	2	2	55	2
Establishment, Maximum - - - - -													

*Alterations since last Return, dated 1st July 1876.*

	Enrolled Volunteers.
Total Enrolled Strength on the 1st of last Quarter - - - - -	62
Add, 12 Gunners - - - - -	12
TOTAL - - - - -	74
Deduct, 5 Gunners; 4 removed for inattention, 1 resigned - - - - -	5
Total Enrolled Strength remaining - - - - -	69



## NAVAL RESERVES.

REPORT on the NAVAL RESERVES by Vice-Admiral Sir *Walter Tait*, K.C.B., Admiral Superintendent of Naval Reserves, before resigning Command.

(*Mr. Algernon Egerton.*)

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*Ordered, by The House of Commons, to be Printed,  
9 February 1877.*

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# NAVAL SAVINGS BANKS.

711

AN ACCOUNT of DEPOSITS in NAVAL SAVINGS BANKS, and the PAYMENTS thereof, and of INTEREST thereon; of all INVESTMENTS under "The NAVAL SAVINGS BANKS ACT, 1866;" and the Application of the INTEREST or DIVIDENDS accruing in respect thereof; and of the Proceeds of any SALE of any STOCKS, ANNUITIES, or SECURITIES, during the Financial Year 1875-76.

Balance due to depositors on 31 March 1875 :	£.	s.	d.	£.	s.	d.
Deposits - - - - -	-	-	-	116,272	8	6
Interest - - - - -	-	-	-	5,871	18	11
				122,144	7	5
Deposits of deserters unclaimed to 31 March 1875 - - -	-	-	-	210	6	-
Deposits received, 1 April 1875 to 31 March 1876 - - -	-	-	-	102,266	18	11
Interest accrued - - ditto - - - ditto - - -	-	-	-	4,578	12	9
				106,845	11	8
	£.			229,200	5	1
Deposits withdrawn, 1 April 1875 to 31 March 1876 - - -	-	-	-	93,458	6	7
Interest paid - - - ditto - - - ditto - - -	-	-	-	4,115	5	6
				97,573	12	1
Deposits of deserters unclaimed to 31 March 1876 - - -	-	-	-	281	12	1
Balance due to depositors on 31 March 1876 :						
Deposits - - - - -	-	-	-	125,009	14	9
Interest - - - - -	-	-	-	6,335	6	2
				131,345	-	11
	£.			229,200	5	1

## ASSETS.

Invested through the Commissioners for the Reduction of the National Debt, 1 April 1875 to 31 March 1876 :	£.	s.	d.	
From the Deposit Account - - - - -	5,000	-	-	
The Dividends accrued on that investment, and on the investments in previous years - - -	3,900	6	3	
In the purchase of £.9,521. 3. 0. Consols - - - - -				8,900 6 3
Purchased in previous years :				
£.33,000. 0. 0. 5 per Cent., Madras Railway Stock -	33,040	8	6	
£. 2,000. 0. 0. 4½ per Cent. - - - ditto - - -	2,075	15	-	
£.65,445. 12. 4. Consols - - - - -	60,674	6	3	
				98,790 9 9
In the hands of Her Majesty's Paymaster General, 31 March 1876 -				23,328 14 3
Deficit (provided for in Navy Estimates for 1876-77) -	607	2	9	
Less Deposits of deserters unclaimed to 31 March 1876	281	12	1	
				325 10 8
	£.			131,345 - 11
LIABILITIES.				
Due to depositors as above - - - - -				131,345 - 11

Number of accounts open, 31 March 1875 - - - - -	9,036
Ditto - - opened between 1 April 1875 and 31 March 1876 -	5,772
	14,808
Number of accounts closed between 1 April 1875 and 31 March 1876 -	4,909
Ditto - - open, 31 March 1876 - - - - -	9,899

Admiralty,  
8 June 1877. }

Henry Walker,  
Accountant General of the Navy, and  
Comptroller of Navy Pay.

## NAVAL SAVINGS BANKS.

ACCOUNT of DEPOSITS in NAVAL SAVINGS BANKS,  
and the PAYMENTS thereof, and of INTEREST thereon;  
of all INVESTMENTS under "The Naval Savings Bank  
Act, 1866"; and the Application of the INTEREST or  
DIVIDENDS accruing in respect thereof; and of the  
PROCEEDS of any SALE of any STOCKS, ANNUITIES, or  
SECURITIES, during the Financial Year 1875-76.

(Presented pursuant to Act 29 & 30 Vict. c. 43.)

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*Ordered, by The House of Commons, to be Printed,  
11 June 1877.*

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713

NAVY (SEAMEN'S WIDOWS' ANNUITIES).

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RETURN to an Order of the Honourable The House of Commons,  
dated 5 June 1877;—for,

RETURN “showing the DEDUCTIONS which would have to be made from the MONTHLY PAY or PENSION of a SEAMAN during the Joint Lives of his Wife and himself, to enable him to secure an ANNUITY of £. 10 for his Widow, according to the Government Insurance Tables.”

Age of Seaman.	Age of Wife.	Deduction per Month.
		<i>s. d.</i>
25   -   -   -	25   -   -   -	4   7
„   -   -   -	20   -   -   -	4   11
30   -   -   -	30   -   -   -	4   8
„   -   -   -	25   -   -   -	5   1
„   -   -   -	20   -   -   -	5   6
35   -   -   -	35   -   -   -	4   10
„   -   -   -	30   -   -   -	5   5
„   -   -   -	25   -   -   -	5   11
40   -   -   -	40   -   -   -	5   2
„   -   -   -	35   -   -   -	5   10
„   -   -   -	30   -   -   -	6   6

*N. B.*—The rates of Calendar Monthly Payment given in the above Table have been computed upon the basis of the Tables by which Life Annuities are granted under the Acts 16 & 17 Vict. c. 45 and 27 & 28 Vict. c. 43.

National Debt Office, }  
23 June 1877. }

(signed)     *Alex. J. Finlaison,*  
Actuary.

Admiralty, }  
2 July 1877. }

THOS. WOLLEY,  
Chief Clerk.

NAVY (SEAMEN'S WIDOWS' ANNUITIES).

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RETURN showing the DEDUCTIONS which would have to be made from the MONTHLY PAY or PENSION of a SEAMAN during the Joint Lives of his Wife and himself, to enable him to secure an ANNUITY of £. 10 for his Widow, according to the Government Insurance Tables.

(*Mr. Childers.*)

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*Ordered, by The House of Commons, to be Printed,  
4 July 1877.*

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NAVY (WASTE OF SEAMEN).

715

RETURN to an Order of the Honourable The House of Commons,  
dated 15 March 1877;—for,

RETURN “ showing the WASTE or VACANCIES that occurred in the NAVY (except in respect to ‘ Officers ’)  
in the Period from the 1st day of April 1875 to the 31st day of March, 1876; from—

1. Deaths ;

2. Discharges on Pension ;

3. Discharges on Ships being paid off ;

4. Invalidings out of the Service ;
5. Desertions ;

6. Discharges with Disgrace or as Objec-  
tionable ;

7. From other Causes ;

specifying in each Case whether the Waste or Vacancies occurred in the—

- (a.) Seamen Class ;

(b.) Boys ;

(c.) Non-seamen Class ;
- (d.) Royal Marines ;

(e.) ‘ Other Grades ;’

“ And the Average Number of each Class borne on the Books in the Year.”

Admiralty, }  
5 April 1877. }

THOS. WOLLEY,  
Chief Clerk.

RETURN showing the WASTE or VACANCIES that occurred in the NAVY (except in respect of Officers)  
in the Period from the 1st day of April 1875 to the 31st day of March 1876, from—

	Men.		Boys.		Coast Guard on Shore.	Royal Marines.
	Seaman Class.	Non-seaman Class.*	Seaman Class.	Non-seaman Class.		
1. Death - - - - -	161	102	40	- -	15	117
2. Discharges on Pension (Long Service) -	410	256	- -	- -	342	438
3. Discharges on Ships being paid off - -	7	355	—	—	—	—
4. Invalidings out of the Service - - -	† 693	† 346	208	1	2	† 420
5. Desertions - - - - -	† 760	† 216	† 211	1	- -	§ 301
6. { Discharges with Disgrace - - -	8	3	2	1	- -	150
{ Ditto as objectionable - - -	37	17	8	- -	- -	
7. From other Causes - - - - -	536	1,284	42	7	2	194
and						
8. Average Number of each Class borne on the Books in the Year - - - - -	19,381	10,888	6,039	174	3,871	13,159

• “ Other Grades ” are included with “ Non-seaman Class.”

† Of these Invalided Men, 443 Seaman Class, 200 Non-seaman Class, and 380 Marines were pensioned (for life or otherwise) for wounds and disabilities.

‡ Of these deserters, 304 men, and 119 boys, were recovered during the year.

§ Exclusive of those recovered.

|| These numbers include Servants, Kropmen, Seedies, and others discharged to shore per order, or on ship leaving station.

H. Walker,  
Accountant General of the Navy,  
and  
Comptroller of Navy Pay.

NAVY (WASTE OF SEAMEN).

RETURN showing the WASTE or VACANCIES  
that occurred in the NAVY (except in respect  
of Officers) in the Period from the 1st day of  
April 1875 to 31st day of March 1876.

(*Captain Pim.*)

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*Ordered, by The House of Commons, to be Printed,  
6 April 1877.*

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NAVY (ENGAGEMENT BETWEEN HER MAJESTY'S SHIPS  
"SHAH" AND "AMETHYST" AND THE "HUASCAR").

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717

RETURN to an Order of the Honourable The House of Commons,  
dated 27 July 1877 ;—for,

COPY "of the OFFICIAL DESPATCHES from Rear Admiral *De Horsey*  
reporting the Encounter between Her Britannic Majesty's Ships 'SHAH'  
and 'AMETHYST,' and the Peruvian Iron-clad Ram 'HUASCAR.'"

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Admiralty, }  
27 July 1877. }

THOS. WOLLEY,  
Chief Clerk.

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— No. 1. —

(No. 159.—17 Enclosures.)

Rear Admiral *A. F. R. De Horsey* to the Secretary of the Admiralty.

Rebel Ironclad "Huascar."

"Shah" at Arica,  
22nd May 1877.

Sir,

I HAVE the honour to report, for the information of the Lords Commissioners of the Admiralty, that having received intelligence that the Pacific Steam Navigation Company's steamers "Santa Rosa" and "John Elder" had been interfered with by the Peruvian rebel ship "Huascar," I caused depositions to be taken. (Enclosures Nos. 1 to 5.)

2. In view of the depositions of the masters and officers of the "Santa Rosa" and "John Elder," and also of a letter from Mr. Graham, Her Majesty's Chargé d'Affaires (Enclosure No. 6), I sent a telegram to Her Majesty's Consuls at Arica and Iquique, as per Enclosure No. 7, and dispatched letters to the commander of the "Huascar," and to Mr. Noel West, the manager of the Pacific Steam Navigation Company, as per Enclosures 10 and 11.

3. Further communications, as per Enclosures 12 to 16 inclusive, induced me to leave Callao after dark on the 18th instant to proceed in search of the "Huascar." Before leaving Callao I telegraphed in cipher to "Amethyst," as per Enclosure No. 17.

4. I arrived at this port this morning and purpose proceeding on to Pisagua and Iquique.

5. The last intelligence of the "Huascar" is that she left Caldera at 6 p.m. on the 18th instant, destination unknown.

I have, &c.  
(signed) *A. F. R. De Horsey*,  
Rear Admiral and Commander in Chief.

The Secretary of the Admiralty.

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## 2 PAPERS RELATING TO ENCOUNTER BETWEEN H.M. SHIPS

SCHEDULE of ENCLOSURES in Pacific Letter to the Secretary of the Admiralty,  
No. 159, of 22nd May 1877.

No.	Date.	From whom.	To whom.	Subject.
	1877 :			
1	14 May	Commander in Chief	Captain Bedford (Memorandum).	Revolutionary Peruvian Ship of War "Huascar."
2	14 "	Captain Bedford	Commander in Chief (with depositions of "Santa Rosa").	
3	14 "	Commander in Chief	Captain Bedford (Memorandum).	
4	14 "	Captain Bedford	Commander in Chief (with depositions of "John Elder").	
5	14 "	Captain of "Santa Rosa."	Commander in Chief -	
6	14 "	Mr. Graham	Commander in Chief -	
7	14 "	Commander in Chief	Consuls, Arica and Iquique (Telegram).	
8	15 "	Commander in Chief	Mr. Graham	
9	14 "	Bankers and Merchants of Lima.	Mr. Graham	
10	16 "	Commander in Chief	Commander of "Huascar" -	
11	16 "	Commander in Chief	Mr. Noel West -	
12	16 "	Commander in Chief	Mr. Graham -	
13	16 "	Mr. Graham	Commander in Chief (with Decree).	
14	16 "	Telegram from Arica	Commander in Chief -	
15	17 "	Mr. Graham	Commander in Chief -	
16	18 "	Explanation of Telegram of 16th May from Arica	-	
17	18 "	Commander in Chief	Captain of "Amethyst" (Telegram).	

Enclosure No. 1.

"Shah," at Callao.

## MEMORANDUM.

14 May 1877.

It having been represented to me that the Pacific Steam Navigation Company's ships "John Elder" and "Santa Rosa," have been boarded by officers of the revolutionary Peruvian ship of war "Huascar," and that the former was brought to at sea by a blank gun from that ship, and suffered certain detention, you are to proceed forthwith on board the said Pacific Steam Navigation Company's ships, and there to take the depositions on oath of the master, chief officer, and officer of the watch, at the time of being boarded, as to the circumstances of such boarding, ascertaining especially—

1st. Whether the "John Elder" was in any way a consenting party to the delay on her voyage.

2nd. Whether any force or threats were used.

3rd. What demands, if any, were made.

4th. The exact amount of detention occasioned to those ships by being boarded.

2. The



2. The official logs of those ships are to be inspected, and a certified copy made of any entry bearing on the subject of their being boarded.

3. This document is to be shown to the masters of the two ships named.

(signed) *A. F. R. De Horsey*,  
Rear Admiral and Commander in Chief.

To Captain Bedford, H.M. Ship "Shah."

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Enclosure No. 2.

Depositions of Master, &c. of "Santa Rosa."

(No. 17.)

"Shah" at Callao,  
14 May 1877.

Sir,

IN compliance with your memorandum of this date, I have the honour to forward herewith the depositions of the master, and chief, and third officers of the "Santa Rosa."

The only entry in her log is,—

"10th May, at Mollendo, 4 p.m.," Peruvian man-of-war "Huascar" arrived from the north."

(signed) *F. G. D. Bedford*, Captain,  
H.M.S. "Shah," 14th May 1877.

2. The master of the "John Elder" positively declines to make any deposition until after he has communicated with his agent on the subject on shore here, under whose directions he is placed, or to present his log book for inspection.

I have, &c.

(signed) *F. G. D. Bedford*,  
Captain.

Rear-Admiral A. F. R. De Horsey,  
Commander in Chief.

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Captain WILLIAM J. BARBER, of Pacific Steam Navigation Company's Steamer "Santa Rosa," states:—

"ON the 10th May the steamer 'Santa Rosa,' being at that time lying to anchor at Mollendo at 4 p.m., the Peruvian man-of-war 'Huascar' arrived from the north; immediately afterwards she lowered her boat which came alongside this ship; two officers then boarded me and requested me to deliver to them the Peruvian Government despatches. I immediately refused to accede to this request. They told me they had no power to enforce it, but had Mr. Periola been on board the 'Huascar' they would probably have taken them by force. This is all that happened. No other demands were made, and I was not detained in any way."

And I hereby solemnly certify that this is the correct statement as made by me.

(signed) *W. J. Barber*.

The "Huascar" was flying three Peruvian flags at the time, and when off the port she fired two blank guns and gave three cheers for Periola.

(signed) *W. J. B.*

Declared before me on board the Pacific Steam Navigation Company's steamer "Santa Rosa" at Callao this 14th day of May 1877.

(signed) *F. G. D. Bedford*,  
Captain, Her Majesty's Ship "Shah."

4 PAPERS RELATING TO ENCOUNTER BETWEEN H.M. SHIPS

Mr. J. KENDAL, Chief Officer, Pacific Steam Navigation Company's Ship  
"Santa Rosa," states:—

"AT about 4 p.m. of the 10th instant, when we were lying at Mollendo, the 'Huascar' arrived off the port and sent a boat alongside with two officers, and they requested the captain to lower the ladder for them, which he did, and came on board. The captain then asked them their business. They then said they wanted the Peruvian mails, which the captain positively refused to deliver up. They said they had no power to take the mails by force, but had Periola been on board they probably would. They did not ask for anything else and did not detain the ship.

"The 'Huascar' had three Peruvian ensigns flying, one at each masthead and one at the peak, and when outside, fired a gun from each side, and gave three cheers for Periola."

And I hereby solemnly certify that this is a correct statement as made by me.

(signed) *J. R. Rendall,*  
Chief Officer.

Declared before me on board the Pacific Steam Navigation Company's steamer "Santa Rosa," this 14th day of May 1877.

(signed) *F. G. D. Bedford,*  
Captain.

Mr. WILLIAM TAYLOR, Third Officer of Pacific Steam Navigation Company's Steamer  
"Santa Rosa," states:—

"AT four, 10th May, we were at anchor at Mollendo, and I observed a boat come alongside, the ladder at the time being up, and for a few seconds, it was still kept up, and one of the officials in the boats wanted to know why the ladder was not down, but instantly it was lowered, and up they came and demanded the mails. The captain said, 'Gentlemen, for the sake of the position that I hold, and the honour of the Company and the Government that these mails are carried for, I dare not and will not allow them to be opened until we go to the final port of discharge.' They demanded nothing else, but did not detain us. The 'Huascar' was flying the Peruvian flag at the time."

And I hereby solemnly certify that this is a correct statement as made by me.

(signed) *Wm. Taylor,*  
Third Officer.

Declared before me on board the Pacific Steam Navigation Company's steamer "Santa Rosa," at Callao, this 14th day of May 1877.

(signed) *F. G. D. Bedford,*  
Captain.

Enclosure No. 3.

MEMORANDUM.

"Shah," at Callao,  
14 May 1877.

IN consequence of your representation that the master of the British ship "John Elder" refused to make any depositions relative to that ship being boarded by the revolutionary Peruvian ship of war "Huascar," and also refused to produce his log book for inspection when called upon by you, a lieutenant is to be sent on board the "John Elder," and on arrival he is, in accordance with the power vested in any commissioned officer of one of Her Majesty's ships, by Section 13 of the Merchant Shipping Act 1854, to muster the crew of that ship, and in their presence to summon the master to appear on board Her Majesty's ship "Shah," and to produce and bring with him all his official ship's papers.

(signed) *A. F. R. De Horsey,*  
Rear Admiral and Commander in Chief.

Captain Bedford,  
Her Majesty's ship "Shah."

Enclosure No. 4.

Transmitting Depositions of Officers of "John Elder."

(No. 18.)

Sir,

"Shah," at Callao,

14 May 1877.

REFERRING to my letter of this date, No. 17, and in compliance with your Memorandum, I have the honour to transmit herewith the depositions of the master, chief and second officers of the "John Elder" (P.S.N. Co.'s steamer) and an extract from the ship's log.

I have, &c.

(signed) *Fred. G. D. Bedford,*

Captain.

Rear Admiral A. F. R. De Horsey,  
Commander in Chief.

Captain G. MASSEY, of Pacific Steam Navigation Company's Steamer, "John Elder," states:—

"At about 1.30 p.m., 11th May, about 30 miles from Arica, sighted a brig-rigged steamer about two points on the port bow, with the Peruvian ensign flying at the peak, which proved to be the Peruvian turret-ship 'Huascar.' Hoisted the British ensign aft, and the company's flag at the main. She altered her course, hoisting the Peruvian flags at the fore and main mastheads, and the Peruvian Jack on the bowsprit, and steered for us, and when on our port quarter turned round and followed us, firing a blank shot across our stern, which compelled me to stop. Accordingly stopped at 1.55 p.m., when the 'Huascar' steamed under our stern, stopped, lowered a four-oared gig, which came alongside, in charge of two officers in Peruvian naval uniform.

"On boarding us the officer in charge said the commander in chief of the 'Huascar' sent his compliments to the commander of the 'John Elder' and regretted stopping us on our way north, but it was necessary for him to know if there were any troops on board, and demanded to see the official correspondence and letters. Captain replied we had no troops on board or official correspondence, being on our way from Valparaiso to Callao, and only touched at Arica.

"On hearing this, he replied that his orders from the commander in chief were to pass through and search the ship. Captain protested against any such proceeding, saying we were a British mail steamer on our way to Callao to catch the English mail, and every minute was valuable and necessary to us to accomplish that object. He then asked if we could supply him with some engine oil, and then captain, fearing that he would carry out his intention of searching the ship, having on board several letters from Arica for President Prado, supplied him with 30 galls. engine oil, and one case brandy, 2 doz. pints of ale, and 100 cigars, for which the ship was paid in Peruvian currency. He also inquired if Señor Periola was on board, and finding he was not, but his son was, requested to see him, and had a conversation with him. He also informed us that he left Callao between 8 and 9 o'clock on Sunday evening, was at Arica on the night of the earthquake, touched at Mollendo and Ido, and was on his way to Arica and Cobija. At 3 p.m. he left, when we proceeded on our way full speed."

(True Extract.)

14 May 1877.

(signed) *F. G. D. Bedford,* Captain.

"This is an extract from the official log, which I wish to be received as my deposition, and I protest against the detention of my ship, which lasted 65 minutes; and I request the Admiral to afford me protection against further detention or interference on the part of the 'Huascar.'"

And I solemnly declare this to be a correct statement as made by me.

(signed) *Geo. Massey.*

EXTRACT from ship's log of "John Elder":—

"May 11th, 1.45, spoke Peruvian war vessel 'Huascar.' 1.55, stopped engines on her firing a gun; was boarded by a lieutenant from her, who demanded to see what official correspondence there was on board. On the commander protesting against such a proceeding, he asked for some engine oil and small stores, which were supplied him. 3, proceeded."

Declared on board Her Majesty's ship "Shah," at Callao, this 14th day of May 1877.

(signed) *F. G. D. Bedford,* Captain.



## 6 PAPERS RELATING TO ENCOUNTER BETWEEN H.M. SHIPS

Mr. THOMAS B. EARLE, Chief Officer, Pacific Steam Navigation Company's Steamer "John Elder," states :—

ABOUT 25 to 30 miles north of Arica we sighted the "Huascar," and when she was abreast of us, fired, having first hoisted Peruvian colours, which we answered; steamed towards us, evidently with the intention of speaking, and as we did not stop, fired the gun, upon which we stopped, and she hauled up alongside and boarded us. I heard none of the conversation between the captain and the officer that came on board, but merely received orders from the commander to supply her with engine oil, which I did. Some other small stores were passed into the boat. This is all I know about it.

And I hereby solemnly declare that this statement is correct, and made by me.

(signed) *Thomas B. Earle.*

Declared before me on board Her Majesty's ship "Shah," at Callao, this 14th day of May 1877.

(signed) *F. G. D. Bedford, Captain.*

Mr. JOCELYN F. RUTHVEN, Second Officer, Pacific Steam Navigation Company's Steamer "John Elder," states :—

WE sighted a vessel about 1.30 p.m. on 11th May about two points on port bow; as she neared us nearly a-beam, she altered her course so as to pass close under our stern, and fired one of her starboard guns, hoisting Peruvian colours. Captain Massey then ordered the engines to be stopped, and she steamed close up under our starboard quarter, lowered a boat, in charge of two officers in naval Peruvian uniform, which came alongside, and one of them, I presume a lieutenant, came on board. The conversation which took place was in Spanish, which I do not understand. They procured some engine oil and small stores from us, and we then proceeded, having been detained 65 minutes.

And I do hereby solemnly declare that this is a correct statement, as made by me.

(signed) *J. Fitzgerald Ruthven,*  
Second Officer.

Declared before me on board Her Majesty's ship "Shah," at Callao, this 14th day of May 1877.

(signed) *F. G. D. Bedford, Captain.*

### Enclosure No. 5.

Royal Mail Steamship "Santa Rosa."

Sir,

Callao, 14 May 1877.

DURING my stay at Mollendo the Peruvian man-of-war "Huascar" arrived (at 3.30 p.m.); she immediately lowered a boat and came alongside. Two officers then boarded me, and requested me to give them the Peruvian Government despatches, which I, of course, refused to deliver.

They appeared to be considerably annoyed, but did not attempt to use any force. After being on board about 20 minutes they returned to their ship.

I left Mollendo at 5.30 p.m., and she was then laying off the port.

I am, &c.

(signed) *W. J. Barber, Commander.*

Rear Admiral De Horsey,

Commander in Chief, Pacific Squadron.

### Enclosure No. 6.

Sir,

British Legation, Lima, 14 May 1877.

I HAVE the honour to inform you that I have received a letter, signed by the leading English bankers, merchants, and others resident in Lima, requesting me to use my influence towards the immediate dispatch of one of Her Majesty's ships to Iquique for the protection of British interests, as the signers of the letter in question fear that the rebel turret ship "Huascar" may endanger British property at that port, and also to assist British subjects who may be suffering



suffering from the effects of the catastrophe which occurred at Iquique on the night of the 9th instant.

As I am aware of the small force at your disposal on this part of the station under your command, I fear it will be difficult for you to meet the wishes of the gentlemen who have written to me, but I nevertheless consider it my duty to make you acquainted with their request.

I have, &c.  
(signed) J. R. Graham.

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Enclosure No. 7.

TELEGRAM.

British Admiral to British Consuls, Arica and Iquique.

15 May.

WARN commander of rebel ship "Huascar" that any interference with British subjects, ships, or property will necessitate my seizing "Huascar" and delivering her to Peruvian Government.

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Enclosure No. 8.

Sir,

"Shah," at Callao, 15 May 1877.

I HAVE the honour to acknowledge the receipt of your letter of yesterday's date, acquainting me that you have received a letter, signed by the leading English bankers, merchants, and others, resident in Lima, expressing a desire that one of Her Majesty's ships should proceed to Iquique for the protection of British interests against the acts of the rebel ship of war "Huascar," and also to assist British subjects who may be sufferers from the effects of the catastrophe which occurred on the night of the 9th instant.

2. I request you will be good enough to inform those gentlemen that on the 13th instant I telegraphed for the "Amethyst" to come from Chili, and that I have this day sent a telegram, as per enclosure, to Her Majesty's Consuls at Arica and Iquique. "Amethyst" has been directed to call at Iquique.

3. I understand that the Peruvian Government are sending a vessel with supplies for the sufferers by the calamity of the 9th, and I request you will further acquaint the signers of the letter under consideration that the proceedings of the "Huascar" will be immediately stopped if any interference with British interests occurs.

4. I shall be glad if you will be so good at your convenience as to furnish me with a copy of the letter from the bankers and merchants referred to.

I have, &c.  
(signed) A. F. R. De Horsey,  
Rear Admiral and Naval Commander in Chief.

James R. Graham, Esq.,  
Her Majesty's Chargé d'Affaires, Lima.

See Enclosure No. 7  
in Pacific Letter No.  
159 of 22nd May 1877.

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Enclosure No. 9.

Sir,

Lima, 14 May 1877.

THE unwarrantable attempt of the "Huascar" in Mollendo and off Arica to oblige the commanders of two of the Pacific Steam Navigation Company's steamers to deliver up correspondence of which they were bearers, the possibility that the proceedings of said vessel may endanger British property in

the port of Iquique ; moreover, the sufferings of many British subjects resident in the latter port, in consequence of the catastrophe on the night of the 9th instant, make it appear most desirable to the undersigned (who have many friends and valuable interests at stake in Iquique) that one of Her Majesty's ships of war should proceed as soon as possible to that port to assist and protect British subjects.

Knowing from experience your readiness to help British subjects whenever they may be in need thereof, the undersigned pray you will use all your influence towards the immediate dispatch for Iquique and adjacent parts of one of Her Majesty's ships for the protection of British interests.

The undersigned have the honour to be, &c.

(signed) *pro* Wm. Gibbs & Co.,

*A. Böhl.*

*Graham, Rowe & Co.*

*pro* Bates, Stokes, & Co.,

*H. W. Isaacson.*

*Duncan, Fox & Co.*

*pro* James Woodgate & Co.,

*A. R. Robertson.*

*Herbert J. Griffin.*

*Norman Evans.*

*William Stirling.*

*Fredk. A. Isaac & Co.*

*Ivan Mathison.*

Bank of London, Mexico, and South America,

*J. P. Anson.*

The Anglo-Peruvian Bank,

*H. R. J. Jameson.*

Her Majesty's Chargé d'Affaires,  
&c. &c. Lima.

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Enclosure No. 10.

Sir,

"Shah," at Callao, 16 May 1877.

By the depositions of the captains and officers of the Pacific Steam Navigation Company's ships "Santa Rosa" and "John Elder," I have learnt that on the 10th instant the former was boarded by a boat from the "Huascar," and that on the 11th instant the later was brought to by a blank gun from the "Huascar" and detained one hour and five minutes.

2. In both cases the depositions show that a demand was made for mails, or dispatches carried by those ships, which demand was of course unlawful, and immediately refused.

3. It becomes my duty to inform you that, notwithstanding my desire to preserve a strict neutrality in all internal dissensions in Peru, any boarding of, or other interference with British ships, or an act of interference with British subjects or property by a revolutionary ship owing allegiance to no recognised or established Government, cannot be tolerated, and that any acts of the kind performed by the "Huascar" will therefore necessitate my taking possession of that ship, and delivering her over to lawful authority.

4. I have further to inform you that any forced service of a British subject who may have been on board the "Huascar" in the service of the Peruvian Government, or any detention against his will of such British subject on board the "Huascar" will be considered just cause for the seizure of that ship by Her Britannic Majesty's naval force under my command.

I have, &c.

(signed) *A. F. R. De Horsey,*

Rear Admiral and Commander in Chief  
of Her Britannic Majesty's  
Naval Forces in the Pacific Ocean.

The Commander  
of the Revolutionary Peruvian Ship of War,  
"Huascar."

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Enclosure No. 11.

Sir,

"Shah," at Callao, 16 May 1877.

HEREWITH I enclose a copy of a letter I have addressed to the Commander of the revolutionary Peruvian ship-of-war, "Huascar," and I request you will be good enough to furnish a copy thereof to such of the commanders of the Pacific Steam Navigation Company's ships as are likely to fall in with the "Huascar," with the view of their showing that letter to any officer of the "Huascar" who may board or detain one of the Pacific Steam Navigation Company's ships.

Enclosure No. 10  
in Pacific letter  
No. 159 of 22 May  
1877.

I am, &c.

(signed) *A. F. R. De Horsey*,  
Rear Admiral and Naval Commander  
in Chief.

Noel West, Esq.,  
Manager of the Peninsular Steam  
Navigation Company, Callao.

Enclosure No. 12.

Sir,

"Shah," at Callao, 16 May 1877.

As the revolutionary Peruvian ship-of-war, "Huascar," has committed or may commit acts of aggression against British interests, and thus necessitate interference on the part of Her Majesty's Naval Forces under my command, I request you will be so good as to furnish me with a certified copy of any proclamation the Peruvian Government may have issued disclaiming responsibility for the acts of that revolutionary ship.

I have, &c.

(signed) *A. F. R. De Horsey*,  
Rear Admiral and Naval Commander  
in Chief.

James R. Graham, Esq.,  
H.M. Chargé d'Affaires, Lima.

Enclosure, No. 13.

Sir,

British Legation, 16 May 1877.

In compliance with the request contained in your Despatch of this day's date, I have the honour to enclose a certified copy of the decree issued by the Peruvian Government, declaring themselves not responsible for any acts which may be committed by the rebel Peruvian war ship "Huascar."

I have, &c.

(signed) *J. R. Graham*.  
Rear Admiral De Horsey,  
Naval Commander in Chief, H. M. ship, "Shah,"  
Callao.

Enclosure in Enclosure No. 13.

Marino Yquario Prado, Presidenté Constitucional de la República.

Considerando.

QUE la deslealtad de unos pocos oficiales de la dotacion del monitor "Huascar" secundada por otros malos ciudadanos ha sustraído dicho bugue de la obediencia del Gobierno nacional.

Decreto.

Art. 1. Alrese el correspondiente juricio á los autores i complices de los delitos cometidos en la noche del 6 del corriente abordo del monitor "Huascar."



10 PAPERS RELATING TO ENCOUNTER BETWEEN H.M. SHIPS

Art. 2. El Gobierno declara no ser de la responsabilidad de la república, los actos que los sublevados consumen, cualquiera qui sea In Naturaleza.

Art. 3. El Gobierno Antorira la aprehension del "Huascar" i ofrece recompensar debidamente a los que, siu pertenecer á la dotacion de los buques que componen la escuadra de opearaciones, lo sometan á la autoridad del Gobierno ó contribuzan á ello.

El Ministro de Estado en el despacho de guerra i marina queda encargado del cumplimiento de este decreto.

Dado en la casa de Gobierno en Lima, a los octro dias del mes de mayo de mil otrocientos setenta i siete.

(firmado) *Mariano Y. Prado,*  
io Pedro Bustamente.  
*Es Copia,* el Official Mayor.  
(firmado) *M. Sebastian Salazar.*

British Legation, Lima.

I HEREBY certify that the foregoing is a true copy of the original decree deposited in the archives of this Legation.

16 May 1877.

(signed) *J. R. Graham,*  
Her Britannic Majesty's Chargé d'Affaires.

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Enclosure No. 14.

TELEGRAM.

(No. 25.)

From Arica, 16th, to British Admiral, Mollendo, 17th.

Callao, May 1877.

"HUASCAR" forcibly took from British barque "Imuncina" seven launches of coals without paying, and sailed from Pisuquia bound Cobija.

Lima Station,  
17 May 1877.

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Enclosure No. 15.

British Legation, Lima,  
17 May 1877.

Sir,

I HAVE the honour to inform you I have just received a visit from the Vice President of the Republic, who has shown me an official telegram from the Prefect of Arequipa informing the Government that the "Huascar" has boarded the British steamer "Colombia," which sailed from here on the 9th instant, and took from on board that vessel Colonel Varela, an official of the Government and a passenger on board the steamer in question.

I lose no time in hastening to inform you of this circumstance.

I have, &c.  
(signed) *J. R. Graham.*

Rear Admiral de Horsey,  
Commander in Chief, Callao,  
&c. &c. &c.

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Enclosure No. 16.

TELEGRAM.

Mollendo to Lima.

"ARICA's number 25, of 121 words, sent you yesterday, addressed to British Admiral, Callao, is dated Arica, 16th, and signed by W. Nugent."

Lima Station,  
18 May 1877.



Enclosure No. 17.

TELEGRAM.

From British Admiral to Captain, "Amethyst," care of British Consul,  
Iquique.

18 May 1877.

REMAIN until further orders at Iquique. Obtain all intelligence possible about rebel ironclad's movements. Your instructions to be kept secret. Acknowledge in cipher to Arica.

— No. 2. —

Rear Admiral *A. F. R. De Horsey* to the Secretary of the Admiralty.

(No. 164.—Enclosure.)

Operations against Pirate Turret Ship "Huascar."

"Shah," at Sea, Lat. 18° 13' S., Long. 73° 48' W.,

Sir,

3 June 1877.

IN continuation of my letter, No. 159, of the 22nd ultimo, I have the honour to report, for the information of the Lords Commissioners of the Admiralty, the measures I have adopted for the protection of British interests in reference to the piratical Peruvian rebel turret ship "Huascar."

2. Leaving Arica at dark on the evening of the 22nd ultimo, I went into Pisuqua the following morning, and having caused the depositions of the chief and second officers of the British barque "Imuncina" to be taken (Enclosure No. 1), and having obtained from the vice-consul at Pisuqua a copy of the protest of the master of that barque (Enclosure No. 2), I proceeded on to Iquique, searching the coast *en route*.

3. At Pisuqua I learnt from Her Majesty's vice-consul that the "Huascar" had taken possession of the town; endeavoured to obtain 12,000 dollars; but in consequence of the poverty of the town, and their losses by the late tidal wave, had failed to obtain the money.

4. Arriving at Iquique the afternoon of the 23rd, I found the "Amethyst" and the Peruvian squadron. Here I caused the deposition of the master of the "Imuncina" to be taken relative to the forced service of the chief engineer of the "Huascar" on board that vessel (Enclosure No. 3).

5. On the 24th, the "Shah" was employed coaling, and I sent the "Amethyst" to Pisuqua with orders, as per Enclosure, No. 4.

6. Having succeeded in obtaining 61 tons of coal by 1 a.m. on the 25th, I put to sea, and proceeded northward under the full impression, from the information that I had received, that the "Huascar" having embarked Pierola, the rebel chief, and being aware of the Peruvian squadron's presence at Iquique, would at once attempt a landing either at Ylo or at Quilca, or Camana.

7. Before daybreak on the 25th I passed Pisuqua and communicated orders to "Amethyst" by flashing signal to proceed to Arica.

8. Proceeding ten knots I arrived at Arica, at 1 p.m., on the 25th, and the "Amethyst" joined me at 4 p.m. The same evening, after obtaining intelligence, the "Shah" and "Amethyst" proceeded on northward, the "Amethyst" having orders as per Enclosure, No. 5.

9. At daybreak, on the 26th, the "Amethyst" reconnoitred Ylo, and the two ships continued northward at a 10-knot speed; off Mollendo detached the "Amethyst" to obtain intelligence by telegraph, and proceeded at slower speed to a rendezvous off Quilca.

10. On the 29th, the "Amethyst" rejoined at a further rendezvous, Pesca-

dores Point; I sent her back to Mollendo for further intelligence, and anchored the "Shah" on a bank, off Cumana, to endeavour to save her coal.

11. The "Amethyst" rejoined the afternoon of the 28th, with intelligence that the Pacific Steam Navigation Company's steamer, "John Elder," had sighted the "Huascar" at 3 a.m. that day, ten miles south of PISAQUA, and steering northwards. Steamed southward, and sent the "Amethyst" again to Mollendo for intelligence.

12. On the 29th the "Amethyst" rejoined soon after daylight, signalling that the "Huascar" was bombarding PISAQUA the previous morning. Started southward, 11 knots, with "Amethyst" in company; the "Amethyst" stationed to look out on the portbeam just within signal distance.

13. At 1 p.m. the same day, the 29th, we sighted a steamer right ahead, which proved to be the "Huascar," with Peruvian colours, and the Peruvian flag at the main, and cleared for action. We gave chase, and made the signal to get up steam for full speed and prepare for action.

14. The "Huascar" tried to escape towards the land, but the "Amethyst" being inshore, assisted to confuse her movements, and by 2.10 p.m., having come up with the "Huascar," within gunshot, I fired a blank gun to bring her to.

15. The "Huascar," having stopped, I sent Senior Lieutenant Ramier on board with orders, as per Enclosure, No. 6.

16. Lieutenant Ramier returned with the following reply: That the President of Peru was on board, that I was mistaken as to the "Huascar" having committed illegal acts, and that her colours would not be hauled down.

17. Having quickly hoisted up the boat, I fired a blank gun, then a shotted gun, near the "Huascar," and after five minutes, according to warning, seeing that her colours were still up, I made the signal to engage, and the action commenced at 3.6 p.m.

18. For the details of the engagement I beg to refer your Lordships to Captain Chatfield's Report, and to one from a copy of the notes taken at the time, both of 1 June. (Enclosures Nos. 7 and 8.)

19. The "Shah's" firing was steady and well maintained, but not so telling as I should have wished. It must, however, be observed that the "Huascar," only three feet out of water, and frequently end-on, was a most difficult object to hit. The "Shah's" fire was also frequently stopped by my order, when, owing to the "Huascar" placing herself close under the town of Ylo, there was risk of injuring the town. The firing was also stopped for a little while in consequence of the "Huascar's" colours coming down, the halliards having been shot away, but subsequently they were re-hoisted.

20. The "Amethyst's" fire was conducted with great precision, but her armament of 64-pounders was of course useless, except to distract attention and to draw the "Huascar's" fire occasionally off the "Shah."

21. The engagement was partly a following one and partly a revolving one, with occasional attempts on the part of the "Huascar" to ram, which had to be carefully guarded against with a ship so long in proportion to her beam, and therefore so slow in turning, as the "Shah."

22. The "Huascar" appeared to be steaming about 11 knots, and to be beautifully handled, always contriving to keep her turret guns pointing on us, except when in their loading position. That the "Huascar's" shot and shell never once struck the "Shah" (merely cutting away a couple of ropes) was singular and Providential, as her 300-pounder shell entering a ship with a large complement like the "Shah" would have had serious results.

23. At 5.45 p.m., it being dusk, and the "Huascar" having placed herself close inshore, and in a line with the town, I caused the firing to cease.

24. The "Shah" and "Amethyst" then took up positions to watch the "Huascar," and a torpedo expedition was organised and despatched from the "Shah," as reported in Enclosure No. 9.



25. At 3.30 a.m. on the 30th May the torpedo expedition returned, reporting that the "Huascar" had escaped. This she could easily do, owing to the darkness of the night, the height of the land, and her draught of water enabling her to go close to the rocks.

26. Concluding that the "Huascar" had certainly gone northward to attempt to effect a landing at Quilca, I proceeded (as soon as the steam pinnace and torpedoes were stowed) with the two ships in that direction, detaching the "Amethyst" to Mollendo for intelligence.

27. At 7 p.m. the "Amethyst" brought off news that the "Huascar" was at Iquique, and preparing to disembark. Her preparing to disembark her force subsequently proved to be incorrect.

28. The "Shah's" coal supply getting short now began to be a serious consideration, but trusting to getting some coal either at Pisagua or Iquique the two ships at once started off for the latter place.

29. At 5 p.m., when 20 miles off Iquique, the "Shah" stopped, and prepared a torpedo expedition.

30. Soon after dark the "Amethyst" came up, and I detached her to board and obtain intelligence from a steamer seen coming from the direction of Iquique. The "Shah" then proceeded on, and when within 7 miles of Iquique, being unable to wait longer for the "Amethyst" lest the moon should rise, the torpedo expedition was despatched to destroy the "Huascar" in Iquique.

31. Shortly after the boats had left we perceived guns, rockets, and blue lights in the direction of Mexillones. Apprehending that the "Amethyst" had got on shore in attempting to intercept the steamer, the "Shah" proceeded towards the lights, getting a launch, and steam anchor and cable ready.

32. Soon, however, the "Amethyst" was perceived returning, and made the signal, "'Huascar' has surrendered to-day to the Peruvian fleet." The "Shah" then steamed with dispatch towards Iquique, making the preconcerted signal of recall to the boats with rockets and blue lights, which recall was fortunately seen in time, and the boats returned.

33. The "Shah" and "Amethyst" remained off Iquique until daylight, when they proceeded into port, the "Shah" taking up a position in the middle of the Peruvian squadron, and between the "Independencia" and "Huascar." The "Independencia" shortly afterwards saluted my flag, which I directed the "Amethyst" to return, and then caused the "Shah's" shotted guns to be drawn.

34. The Peruvian squadron at Iquique now consisted of the "Independencia" (broad pennant at the main), "Union," "Atahualpa," "Pilcomayo," "Limena," and the surrendered "Huascar."

35. Having received confirmation of the "Huascar" having surrendered, I obtained as much coal as possible by 6 p.m., and having detached the "Amethyst" to resume her station as senior officer's ship on the coast of Chili, I proceeded in the "Shah" northward for Callao and Panama.

36. Before my departure from Iquique, Commodore Moore came on board to call upon and thank me for having been the means of the "Huascar's" surrendering. I, however, stopped his thanks, and explained to him most distinctly that Her Majesty's naval forces under my command had taken, and would take, no part whatever in the internal dissensions or other affairs of Peru; the action I had taken in respect to the "Huascar" having been solely on account of her having committed piratical acts against British subjects, ships, and property.

37. In reply to my inquiries, Commodore Moore informed me that the "Huascar" had landed the two English engineers at Autofagasta and shipped two French ones instead. He also informed me that amongst the "Huascar's" crew were two or three Englishmen, but that they took no part in the action. A statement I venture to think incorrect; but in the absence of proof I have abstained from further complicating matters by making any demand for their delivery into British custody.

38. I had a further conversation with Commodore Moore, but of so singular a turn that I shall give its substance in a separate letter.

39. I trust that in view of the proceedings I have reported, and for the following reasons, the Lords Commissioners of the Admiralty will deem that I was not only justified in the course I have adopted, but that I had no alternative, viewing my duty to protect the lives, ships, and property of Her Majesty's subjects.

40. I submit that an officer holding the high appointment of commander in chief is bound to act according to the best of his ability in such cases without embarrassing his Government with perplexing questions, and having done so to stand or fall by the subsequent judgment of his superiors, well knowing that no Government could give him decisive orders upon the mere information which could be embodied in a telegram at this distance, even if time had admitted of waiting for a reply (when a section of the cable was not working).

41. The reasons I submit to their Lordships are as follows :—

I. The “Huascar” in boarding and detaining the “John Elder” at sea, in boarding and demanding despatches from the “Santa Rosa,” in forcibly taking coal from the “Imuncina,” in forcibly taking a Peruvian officer out of the “Columbia,” and in forcibly compelling the engineer, a British subject, to serve against his will, committed acts which could not be tolerated.

II. The “Huascar,” having no lawful commission as a ship of war, and owning no allegiance to any State, and the Peruvian Government having disclaimed all responsibility for her acts, no reclamation or satisfaction could be obtained except from that ship herself.

III. That the status of the “Huascar,” previous to action with the “Shah” and “Amethyst,” was, if not that of a pirate, at least that of a rebel ship having committed piratical acts.

IV. That the status of the “Huascar,” after refusing to yield to my lawful authority, and after engaging Her Majesty's ships, was that of a pirate.

V. That had the “Huascar” not been destroyed or captured, there would have remained no safety to British ships or property on this coast, not even to Her Majesty's ships, as the “Huascar” might have destroyed the “Shah” or the “Amethyst,” by ramming any night at any port they were found.

VI. That I trust the lesson that has been taught to offenders against international law will prove beneficial to British interests for many years to come.

VII. That I have carefully abstained from any interference with the interests of the Peruvian Government, or those of the persons in armed rebellion against that Government; my action in respect to the “Huascar” having been entirely for British interests.

42. Trusting that my proceedings will receive their Lordships approval.

I have, &c.  
(signed) A. F. R. De Horsey,  
Rear Admiral and Commander in Chief.

The Secretary of the Admiralty.



SCHEDULE OF ENCLOSURES.

No.	Date.	From whom.	To whom.	Subject.
	1877 :			
1	23 May	-	Depositions of Chief and Second Officers of British barque "Imuncina."	
2	14 "	-	Deposition of the Master of the "Imuncina" before Vice Consul, Pisagua.	
3	24 "	-	Deposition of Master of "Imuncina."	
4	24 "	-	Commander in Chief - "Amethyst" - -	Sailing orders.
5	25 "	-	- ditto - - -	- ditto.
6	29 "	-	- ditto - - -	Officer of the Guard
7	1 June	-	"Amethyst" - -	Commander in Chief
8	1 "	-	"Shah" - - -	- ditto.
9	31 May	-	Commander in Chief - "Shah" - -	Torpedo expedition.
10	3 June	-	"Shah" - - -	Commander in Chief
				Report of the proceedings of the torpedo expedition.

Enclosure No. 1.

ROWLAND CAMPBELL, Chief Officer of barque "Imuncina," states :—

AT 4 p.m., Saturday the 12th, anchored at Pisagua; an officer from the Peruvian man-of-war "Huascar" came on board, wanting our coals, which the captain refused to give. He would take no denial, and sent a launch alongside, and commenced to load her with his own crew; the officer having a sword and revolver on. Sunday, May 13th. Launches from the Peruvian man-of-war came alongside, and took other four launches of coals from us. Monday, May 14th. The "Huascar" took another launch from us. At 1 p.m. the "Huascar" left the harbour.

This is a correct extract from the deck log, and I wish to make it my deposition. The commander of the "Huascar" sent in a receipt for 69 tons of coal before leaving. When the first launch came alongside for coals, and we refused to load her, the officer sent back to the "Huascar" for instructions, and was told to take them, which he did, but used no threats.

The captain is now at Iquique, having left here on Monday.

And I hereby solemnly declare that this is a correct statement as made by me.

(signed) *Rowland Campbell,*  
Chief Officer.

Declared before me on board H.M.S. "Shah" at Pisagua,  
this 23rd day of May 1877.

(signed) *Charles Lindsay,*  
Lieutenant.

Forwarded,

(signed) *F. G. D. Bedford,*  
Captain.

Mr. WILLIAM JOHNSTON, Second Officer of barque "Irnuncina," states :—

At about 4 p.m. on Saturday, May 12th, the Peruvian man-of-war "Huascar" arrived, and sent a launch for coals, which they took when the captain refused to give it them. On Sunday she took four more launches of coal, and on Monday one, after which she left.

No threatening language was used, except that the officer said he must take the coals, and no violence was used, or the ship in any way detained thereby. The officer had a sword and revolver on.

And I hereby solemnly declare that this is a correct statement as made by me.

(signed) *William Johnston,*  
Second Mate.

Declared before me on board H.M.S. "Shah" at Pisagua,  
this 23rd day of May 1877.

(signed) *Charles Lindsay,*  
Lieutenant.

Forwarded.

(signed) *F. G. D. Bedford,*  
Captain.

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Enclosure No. 2.

BEFORE me, William Grundy, Her Britannic Majesty's pro Vice Consul in this port of Pisagua, in the Republic of Peru, on this 14th day of May 1877, came and appeared George Gibb, master of the British barque "Imuncina," of Glasgow, No. 60,326, and stated and declared as follows :—

That on the 12th, 13th, and 14th of this present month the commander and officers of the Peruvian man-of-war "Huascar" boarded my vessel, and forcibly took possession of 69 tons of coal and 500 empty bags.

Whereupon the appearer did declare to protest and, by this instrument doth solemnly protest accordingly against the above acts, and all and every the party or parties therein interested, and being called upon to certify the premises, I do attest and certify accordingly, and have hereunto set my hand and seal of office in the aforesaid port of Pisagua on the day, month, and year before mentioned.

(signed) *George Gibb,*  
Master of the British barque "Irnuncina."

Before me,

(signed) *Wm. Grundy,* pro Vice Consul.

---

Enclosure No. 3.

DEPOSITION of Master of "Imuncina," lying at Pisagua on May 13th.

Mr. GEORGE GIBB, master of barque "Imuncina," states :

Mr. Armstrong, the chief engineer of the "Huascar," called on board on the 13th, when I was on shore, under charge of an officer with a sword and revolver in his belt, and said he had obtained half an hour's leave, of which 20 minutes had then expired, and wished to make out a protest to take to the British Consul, as he was detained on board by force, and was obliged to get steam up at the point of the bayonet at Callao. He sat down to write out the protest, but the officer said the time was up, and he must go away.

He asked if I could come on board, so that he could make out the protest.

My

My boat went alongside the launch, which was alongside the "Huascar," and Mr. Armstrong dropped a letter into my boat for me, but the officer on board noticed it, and tore the letter up.

And I hereby solemnly declare that this is a true statement.

(signed) *George Gibb.*

Declared in my presence on board Her Majesty's ship "Shah" at Iquique, this 24th day of May 1877.

(signed) *F. G. D. Bedford, Captain.*

Enclosure No. 4.

MEMORANDUM.

"Shah," at Iquique, 24 May 1877.

As soon as ready, proceed to Pisagua; coal or not there as you find desirable. Then proceed on to Arica, reporting arrival by telegraph; wait at Arica for an answer to your telegraph; on obtaining which (unless it contain contrary orders), act according to your judgment, either remaining at Arica, or proceeding northward; observing that my object is to obtain information of the "Huascar's" movements, with a view to falling in with her in the "Shah."

The only places in telegraphic communication are Mollendo, Arica, and Iquique, and it is doubtful whether the communication between Arica and Mollendo is restored.

In your telegram from Arica state whether "Shah" can obtain coal at Pisagua or Arica.

If on arrival at Arica you learn that "Shah" has left Iquique, telegraph all the same, but use your judgment as to waiting for an answer or not.

It appears doubtful whether "Shah" can get sufficient or any coal here, in which case I may go to Pisagua and back here.

I have, &c.

(signed) *A. F. R. De Horsey,*  
Rear Admiral and Commander in Chief.

Captain A. J. Chatfield,  
Her Majesty's Ship "Amethyst."

Enclosure No. 5.

MEMORANDUM.

"Shah," at Arica, 25 May 1877.

On weighing this evening, the "Amethyst" is to take station on the "Shah's" starboard beam, and to steer so as to follow the land at a safe distance, but near enough to sight any stranger that may be fallen in with near the land.

The "Shah" will pursue such a course as to keep within signal distance of the "Amethyst."

If a steamer is sighted, she is to be boarded for intelligence, and the result communicated by signal.

If the "Huascar" be sighted, the fact is to be communicated by signal, and if necessary by rockets, to call attention, on which the "Shah" will close, and the two ships (in the absence of other orders) will follow the "Huascar" just out of gunshot until daylight.

I have, &c.

(signed) *A. F. R. De Horsey,*  
Rear Admiral and Commander in Chief.

Captain Chatfield,  
Her Majesty's Ship "Amethyst."



## Enclosure No. 6.

## ORDERS TO THE OFFICER OF THE GUARD.

By *Algernon Frederick Rous De Horsey*, Esq., Rear Admiral in Her Majesty's Fleet, and Commander in Chief of Her Majesty's Ships and Vessels employed and to be employed on the Pacific Station.

ACQUAINT the commander of the "Huascar" that I have come to take possession of that ship in the name of Her Majesty the Queen of Great Britain.

That I am adopting this course in consequence of the "Huascar" having committed certain illegal acts against British subjects, ships, and property.

That I am not acting on behalf of the Peruvian Government.

That if the "Huascar's" colours are at once hauled down, and the ship peaceably delivered up, the lives, liberties, and personal property of all on board will be respected. That in such case I shall not deliver them up to their Government, but will land them at such neutral place (within a reasonable distance) as the commander may desire.

But that if any resistance is offered, or a single man of Her Majesty's navy be hurt, I make no terms, and the officers and crew of the "Huascar" will be liable to be treated as pirates.

Viewing the "Shah's" undoubted superiority of force, and her high speed, you will urge the "Huascar's" commander to avoid the loss of life to his officers and crew, if not their total destruction, which resistance must entail.

If the "Huascar's" colours are not hauled down, a blank gun will be fired. Five minutes afterwards a shotted gun near the "Huascar," and five minutes afterwards, action will commence.

The above warning will not be waited for if any act of aggression or preparation for resistance be perceived.

Given on board the "Shah," at sea, this 29th day of May 1877.

(signed) *A. F. R. De Horsey.*

To the Officer of the Guard,  
Her Majesty's Ship "Shah."

By command of the Commander in Chief,

(signed) *J. H. Cleverton*, Secretary.

## Enclosure No. 7.

(No. 28 of 1877.)

## Engagement with "Huascar."

Her Majesty's Ship "Amethyst," Iquique,  
1 June 1877.

Sir,

IN answer to your Memorandum of this day's date, requiring me to render an account of the engagement between this ship and the "Huascar," Peruvian ironclad,—

I have the honour to inform you, that on the 29th May, at 2.40 p.m., the signal being made "to engage," I opened fire on the "Huascar," steaming as requisite around her or towards.

About 3.30 p.m. the "Huascar" made for the Rocks off Cal Point, where the ground was too foul to follow her closely.

I stood in as close as possible with safety, and the "Huascar," at 4 p.m., made for the town of Ilo. I stood after her, firing, as opportunity offered, when at 5.15 p.m., close off the rocks, the Admiral made general recall.

The "Huascar" ceased firing, being close under cover of town.

Owing



Owing to the indifferent firing of the "Huascar," the "Amethyst" was not struck, though several shots passed between the masts.

Our men fired with great steadiness and precision, but our shell had no effect on the iron plates of the "Huascar," although they kept the deck clear of riflemen on the ironclad.

I cannot speak too highly of the conduct of Lieutenant Bickford, Mr. Miller (Navigating Lieutenant), and also of all the officers and men during the engagement. Every order was carried out with precision and celerity, and the engines under Mr. Watson, Chief Engineer, were worked with the greatest exactitude.

The "Huascar" was beautifully handled, and if her gunnery had been equally good, she would have been a most formidable enemy.

I have, &c.  
(signed) *A. J. Chatfield,*  
Captain.

Rear Admiral A. F. R. De Horsey,  
Commander in Chief.  
&c. &c.

Enclosure No. 8.

Engagement with the Pirate "Huascar."

NOTES taken at the Time.

(No. 23 — 1 Enclosure.)

Sir,

"Shah" at Iquique,  
1 June 1877.

IN compliance with your Memorandum of this date, I have the honour to transmit herewith a copy of the Notes taken at the time of the "Shah's" engagement with the "Huascar," on the 29th ultimo, by Mr. Wall, Assistant Paymaster, under my direction.

I have, &c.  
(signed) *Fred. G. Bedford,*  
Captain.

Rear Admiral A. F. R. De Horsey,  
Commander in Chief.

Enclosure to "Shah's letter, No. 23, of 1st June 1877.

Tuesday, 29th May.

ACTION between the Pirate "Huascar," and Her Majesty's Ships "Shah" and "Amethyst."

0.50 p.m. Sighted steamer standing towards us; 1.10 p.m. steamer altered course, and stood into Yeo; 1.15 p.m. recognised her as ironclad turret-ship "Huascar," bearing Peruvian ensign at main masthead and peak, with jack on bowsprit.

1.32 p.m. Sounded to quarters for action.

1.42 p.m. Batteries reported clear.

2.15 p.m. Fired blank gun to attract attention; "Huascar" stopped immediately.

2.17 p.m. Lowered cutter with senior Lieutenant to board her; 2.23 boarded.

2.30 p.m. Cutter shoved off, and returned at 2.37.

2.56 p.m. Fired a second blank charge; "Huascar" distant 4,200 yards.

3.0 p.m. Fired a shot across her bows.

3.6 p.m. Commenced action with port quarter deck guns at 1,900 yards; port battery firing independently.

3.7 p.m. "Huascar" replied with one turret-gun (the other not having been yet run out) and a small gun; the first shot passing just abaft our fore-top, and the other abaft the mainmast, cutting away royal and topgallant-yard ropes, and sail-tackle whip.

3.9 p.m. "Amethyst" engaged enemy; "Huascar" fired a small gun at her, and with another cut away our fore royal braces.

3.26 p.m. Bow gun was reported disabled by a Palliser shell jamming in the bore.

3.30 p.m. Starboard broadside commenced firing.

3.40 p.m. Bow gun reported in action.  
 3.55 p.m. "Huascar" fired a shot from turret gun, passing between our main and mizen masts.  
 4.12 p.m. Fired starboard electric broadside at 2,000 yards.  
 4.34 p.m. Fired ditto.  
 4.35 p.m. "Huascar's" shot fell across our bows (wetting bow gun's crew by the splash).  
 4.36 p.m. "Huascar" fired at "Amethyst."  
 4.48 p.m. Fired starboard broadside by directing gun. Very good shot.  
 4.50 p.m. Fired ditto.  
 4.54 p.m. Fired ditto.  
 5.3 p.m. Large shot from "Huascar" passed over our poop, and another fell short of "Amethyst" at 5.8 p.m.  
 5.11 p.m. "Huascar" fired shell from 40-pounder, which burst halfway. She was then closing us apparently to ram.  
 5.13 p.m. Gatling gun commenced firing.  
 5.14 p.m. Fired Whitehead torpedo (track of it traced about halfway to the "Huascar" which had turned stern on instead of broadside, as when it was fired. Apparently it had not speed to overtake her), and port electric broadside 400 yards.  
 5.15 p.m. "Huascar's" cross trees (main topmast) shot away.  
 5.16 p.m. Bridge port quarter boat, and funnel casing ditto.  
 5.35 p.m. "Huascar" fired two shots from turret between our main and mizen-masts, low, one dropping just before Admiral's galley.  
 5.45 p.m. "Shah" ceased firing.  
 The "Cease fire" was sounded on several occasions owing to the "Huascar" manœuvring in front of the town of Yeo, or the "Amethyst" getting in our line of fire.  
 9.5 p.m. Steam pinnace and whaler went away in charge of Gunnery Lieutenant, with Whitehead and outrigger torpedoes to try and blow "Huascar" up.  
 Boats returned at 3.30 a.m. on the 30th May, having discovered that "Huascar" had got out.

*Fred. G. L. Bedford, Captain.*

#### Enclosure No. 9.

#### MEMORANDUM.

"Shah," at Sea, 31 May 1877.

It being my intention to send a torpedo expedition to endeavour to destroy the "Huascar," if in Iquique, you are to organise one accordingly, and to submit the orders you may give to the officer in command of the expedition for my approval.

2. In drawing up the orders you are to observe the following points. All other details I leave for your judgment.

I. As the success of the expedition so largely depends on skill in torpedo management, I desire that Gunnery Lieutenant Lindsay be in command.

II. The other officers and men of the expedition are to be volunteers.

III. The boats to be employed should, I think, be—

(a.) The steam pinnace with two spar torpedoes.

(b.) A cutter with a Whitehead torpedo hoisted up to a davit on her broadside, and the Gatling gun in her bow.

(c.) A gig or whaler to manage the Whitehead torpedo.

IV. The pinnace should be ready to be hoisted out with steam up, and the other boats ready as far as practicable, the Whitehead suspended ready for lowering into the water, and the Gatling ready for lowering into the cutter by the time we stop at the rendezvous.

V. The boats' oars and crutches to be, as far as practicable, muffled.

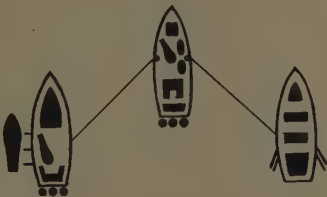
VI. The boats, until near, will probably tow best as per sketch, the cutter having the torpedo on the off-side. (See diagram No. 1.)

VII. A signal with rockets and blue lights to be established to denote success.

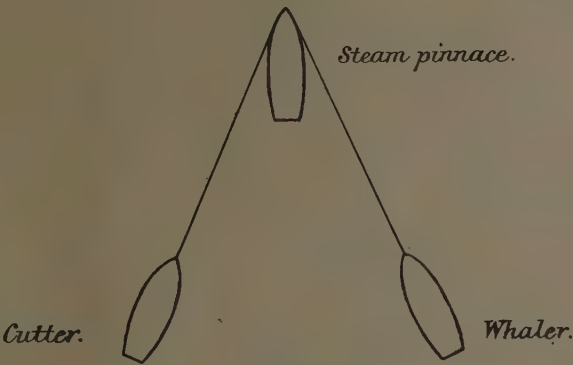
VIII. The

To face page 20.

DIAGRAM, N° 1.



DIAGRAM, N° 2.







VIII. The boats to be ordered to join the "Amethyst" after the affair.  
That ship will receive the requisite orders.

IX. Buckets for baling to be in the boats.

I have, &c.  
(signed) *A. F. R. De Horsey*,  
Rear Admiral and Commander in Chief.

Captain Bedford,  
Her Majesty's Ship "Shah."

The Whitehead must be set to sink, and is not to be used if at the risk of other ships.

Enclosure No. 10.

(No. 25—Two Enclosures.)

Night Expedition against the "Huascar," on 29th and 31st May.

"SHAH," at Sea.

Lat. 18°13'3" S.; Long. 72°48'4" W.

Sir,

3 June 1877.

I HAVE the honour to submit Lieutenant Lindsay's report of proceedings whilst away in command of the Torpedo Expeditions on the nights of 29th and 31st May; and also copies of my orders to him, and the officers under him.

2. I wish to bring under your notice that, although desired by your Memorandum of the 31st May to place Lieutenant Lindsay in command, he had previously volunteered to conduct the service.

I have, &c.  
Rear Admiral A. F. R. De Horsey, (signed) *Fred. G. D. Bedford*,  
Commander in Chief. Captain.

Lieutenant C. Lindsay to Captain F. G. D. Bedford.

Sir,

Her Majesty's Ship "Shah," at Sea,

3 June 1877.

I HAVE the honour to report, in compliance with your Memorandum of this date, that in the execution of your orders, I proceeded in command of the expedition on the night of the 29th ultimo, composed of the steam pinnace and whaler manned with volunteers, with Whitehead and outrigger torpedoes to attempt the destruction of the ironclad turret ship "Huascar."

Having left the ship at 9.5 p.m. and made for the shore, about six miles to the northward of Ylo, and thoroughly reconnoitred the coast up to the town without perceiving any signs of our enemy, suddenly observing a very suspicious looking vessel, when within 1,000 yards of her, and feeling very little doubt of this being the object of our search, I hope I am not exceeding my duty in saying I was pleased to note the cool and determined behaviour of all, and feel no doubt in my mind of the success of the enterprise.

However, having closed her considerably, and ascertained she was not the "Huascar" (having previously discovered that this was the only ship in the harbour), I boarded her in hopes of obtaining useful information. She proved to be the steamer "Maria Louise," from Iquique. The captain was at first very uncommunicative, and said he knew nothing of the "Huascar," but after a little pressure informed me that two officers had landed from the enemy's vessel, and shortly after came off in his boat, pulling three or four miles in search of their ship; being unable to find her, they returned to the steamer, where they were met by the captain of the port, who took them to the shore as prisoners. The captain further told me they had stated that three or four men had been killed and several wounded on board the pirate in the late engagement; he knew

nothing of her destination. Seeing nothing further could be accomplished, I returned to the ship with all possible dispatch.

As regards the second expedition: On the night of the 31st ultimo, in accordance with your written orders of that date, I again started with the steam pinnace, whaler, and cutter, the latter being used to carry the Whitehead torpedo, and render all possible assistance in the cause of humanity after the destruction of the enemy. Having taken them in tow, we proceeded at full speed for the harbour, intending to board an English merchant ship for the purpose of obtaining intelligence as to her whereabouts, then to approach myself in the whaler with the fish torpedo from the inshore side, and fire it when within 80 yards on the beam. The pinnace, under Lieutenant Abbott, was directed to attack on the opposite side, but not to discover themselves unless firing was heard, in which case she was to steam straight to the "Huascar," and blow her up with the outrigger torpedo.

The cutter, under Sub-Lieutenant Gray, if necessary, to cover the attack and clear the enemy's upper deck with the Gatling gun.

When within a mile of the shipping I observed our recall, and had to return, when we heard the "Huascar" had surrendered.

I can only add that there was the same order, discipline, and confidence exhibited as on last occasion.

I have, &c.

(signed) *Charles Lindsay,*  
Lieutenant.

Captain Fred. G. D. Bedford,  
Her Majesty's Ship "Shah."

Captain *F. G. D. Bedford* to Rear-Admiral *A. F. De Horsey*.

Sir, "Shah," at Sea, 31 May 1877.

In compliance with your Memorandum of this date, I have the honour to submit for your approval the orders I purpose giving to Lieutenant Lindsay.

2. In consequence of the numbers of volunteers, officers, seamen and marines, I have given those officers and men the preference who were engaged in the expedition on Tuesday night. They are all volunteered by Lieutenant Lindsay, and approved by me.

3. I have endeavoured to impress upon the officers that success depends upon silence and cool judgment, and especially cautioned them that the principal object of the expedition is to try and insure success with as little risk to life or damage to our boats as can be helped.

I have, &c.

(signed) *Fred. G. D. Bedford*, Captain.

Rear Admiral *A. F. De Horsey*,  
Commander in Chief.

Captain *F. G. Bedford* to Lieutenant *C. Lindsay*:

#### MEMORANDUM.

"Shah," at Sea, 31 May 1877.

In compliance with directions from the Commander in Chief, you are to take command of the expedition charged with the duty of attempting the destruction of the pirate ship "Huascar," to-night.

The following officers (volunteers) are to place themselves under your orders:—

Lieutenant Abbott, in charge of steam pinnace,

Sub-Lieutenants Gray and Talbot; Surgeons Allen and Sibbald,

Mr. White, Engineer,

and the undermentioned petty officers and men are to compose the boats' crews, and be distributed as noted against their names.

You are, on leaving the ship at the rendezvous, eight miles S.S.E. of Iquique,  
to

to proceed towards the harbour, keeping as near the land as prudent, outside the surf.

You are to tow the boats in the following manner, shown in Diagram No. 2.

On nearing the ships in the harbour you are to proceed in the whaler alongside one or two of the English merchant ships at anchor there, and obtain information of the position of the "Huascar" in the harbour, and other intelligence of moment.

In an expedition of this sort much must be left to the discretion of the officer in command, but as a general idea, after discovering the whereabouts of the "Huascar," you should lower the Whitehead torpedo from the cutter, and take it in tow of the whaler, and proceed to approach the "Huascar" by the route that seems least likely to attract attention, probably from inshore of her.

The steam pinnace, with cutter near, and both concealed as much as possible, should be prepared to attack on the opposite side to which you purpose to fire the Whitehead torpedo at, but not to discover themselves unless firing is heard from the ship, or they have good reason to suppose you have failed.

In either of these cases she should be directed to steam straight for the "Huascar," and endeavour to blow her up with the outrigger torpedo. The cutter, with the Gatling gun, pulling and taking up such a position as will best enable her to clear the "Huascar's" upper deck of riflemen, &c.; but with positive orders not to fire unless fire is opened on the pinnace.

Bearing in mind the dangerous character of the Whitehead torpedo, and the disastrous calamity that would ensue if, from careless aim or otherwise, its course should be directed so that it might strike another vessel instead of the "Huascar;" you are most positively ordered not to project it unless certain that it will hit the "Huascar" direct, and not more than 80 yards distant. It is to be fitted to run not more than 200 yards, and then sink.

If from the position in which she is lying or other causes it seems impossible to fulfil these conditions, you should consider the advisability of abandoning the idea of using the Whitehead, and attempt the service with the pinnace.

If successful, you are to fire a rocket and blue light, and render all possible assistance in the cause of humanity. In any case you are to return to the "Amethyst," or "Shah," if near, on the completion of the service.

The boats' crews are to be dressed in white working-rig, and blue clothing is to be taken in the boats. Each man is to be provided with a life belt. They are to be armed with revolvers, rifles, and sword bayonets.

Silence is to be most strictly enjoined, and no firing without clear and positive orders allowed.

Should you find the "Huascar" under weigh, or with no reasonable prospects of getting near enough to carry out your orders, you should endeavour to convey the information to the "Amethyst" by flashing signal, and return.

I have, &c.

To Lieutenant C. Lindsay,  
Her Majesty's Ship "Shah."

(signed) *Fred. G. Bedford,*  
Captain.

#### WHALER.

Sub-Lieutenant Talbot.  
J. Barry, Chief Gunner's Mate.  
H. Eason, Chief, Signals.

E. Case, Captain's Coxswain.  
E. Neil, Second Captain Foretop.  
Dr. Sibbald.

#### STEAM PINNACE.

Lieutenant Abbott.  
Dr. Allen.  
Navigating Sub-Lieutenant Steele.  
Mr. White, Engineer.  
W. Woollett, Coxswain, Pinnace.  
J. Langford, Gunner's Mate.  
J. Wheadon, Second Captain, Quarter-deck.  
W. McQuire, Second Captain, Maintop.

W. Allchin, Leading Seaman.  
J. James, Leading Seaman.  
W. Clarke, A.B.  
C. Warren, A.B.  
J. Allen, Stoker.  
J. Oakley, Stoker.  
Corporal Breakspeare, R.M.  
Private J. Clooney.



## CUTTER.

Sub-Lieutenant Gray.  
 Geo. Bracey, Coxswain, Cutter.  
 E. Castellane, A.B.  
 J. Deane, A.B.  
 J. Morgan, A.B.  
 W. Fletcher, A.B.  
 J. Barrow, A.B.  
 J. Griffin, A.B.

S. Leadbeater, Leading Seaman.  
 G. Ratsey, Captain, Mizentop.  
 H. Price, A.B.  
 W. Thompson, A.B.  
 W. Motler, A.B.  
 S. Dalby, A.B.  
 Corporal Crumpton, R.M.A.  
 Private H. Maule, R.M.

---

Captain *F. G. D. Bedford* to Lieutenant *T. T. Abbott*.

## MEMORANDUM.

"Shah," at Sea, 31 May 1877.

You are to take command of the steam pinnace in the expedition to-night, and place yourself under the orders of Lieutenant Lindsay.

The intention is, if possible, to strike first with the Whitehead torpedo; should you have reason to suppose that this will not succeed, or hear firing from the "Huascar," you are to endeavour to blow her up with the outrigger torpedo, taking care the torpedo is actually in contact with the ship, and, if possible, that the engines are working astern at the time.

I have, &c.

(signed) *Fred. G. D. Bedford*, Captain.

Lieutenant Thomas T. Abbott,  
 Her Majesty's Ship "Shah."

---

Captain *F. G. D. Bedford* to Sub-Lieutenant *W. A. Gray*.

## MEMORANDUM.

"Shah," at Sea, 31 May 1877.

You are to take command of the first cutter of this ship in the expedition to-night, and place yourself under the orders of Lieutenant Lindsay. You are to be very careful no injury is done to the Whitehead torpedo while it is hanging at the boat's side.

You are to keep your men well in hand, and not allow any noise or firing unless you receive directions from your superior officer. While Lieutenant Lindsay is engaged with the Whitehead torpedo you must look to Lieutenant Abbott for directions.

I have, &c.

(signed) *Fred. G. D. Bedford*, Captain.

To Sub-Lieutenant W. A. Gray,  
 Her Majesty's Ship "Shah."

---





NAVY (ENGAGEMENT BETWEEN  
HER MAJESTY'S SHIPS "SHAH" AND  
"AMETHYST" AND THE "HUASCAR").

---

COPY of the OFFICIAL DESPATCHES from Rear  
Admiral *De Horsey* reporting the Encounter  
between Her Britannic Majesty's Ships "SHAH"  
and "AMETHYST," and the Peruvian Iron-clad  
Ran "HUASCAR."

(*Mr. Algernon Egerton.*)

---

*Ordered, by The House of Commons, to be Printed,  
27 July 1877.*

---

[*Price 6d.*]

369.

*Under 3 oz.*

NAVY (SHIPS BUILT).

---

745

RETURN to an Order of the Honourable The House of Commons,  
dated 14 August 1877:—for,

RETURN “of the Amount of SHIPPING Estimated for and BUILT from the Year 1865-6 to the Year 1876-7, and including also, in a Tabular Form, the Total Number of TONS in each Year Estimated for and the TOTAL BUILT respectively in the ROYAL DOCKYARDS and by CONTRACT, and the MONEY Voted in each Year for BUILDING compared with the EXPENDITURE (in continuation of Parliamentary Paper, No. 239, of Session 1876).”

Admiralty, }  
14 August 1877. }

THOS. WOLLEY,  
Chief Clerk.

(*Mr. William Henry Smith.*)

---

Ordered, by The House of Commons, to be Printed,  
14 August 1877.

---

RETURN of the Amount of SHIPPING Estimated for and BUILT from the Year 1865-6 to the Year 1876-7, in the ROYAL DOCKYARDS and by CONTRACT, and the MONEY Voted in each Year for BUILDING

NAVY ESTIMATES.		DOCKYARDS.									
		IRON-CLADS.				WOODEN, IRON, AND COMPOSITE.					
		Estimated for.		Actually Built.		Estimated for.		Actually Built.			
		Tons (B. M.)	Value.	Tons (B. M.)	Value.	Tons (B. M.)	Value.	Tons (B. M.)	Value.		
			£.		£.		£.		£.		
1865-66	-	9,458	* 601,516	7,384	469,612	5,657	* 239,310	5,113	216,297		1
1866-67	-	8,263	* 489,500	5,900	349,516	8,203	* 274,647	8,242	275,953		2
1867-68	-	6,820	* 314,223	7,552	347,949	16,724	* 515,984	16,625	512,930		3
1868-69	-	7,538	* 317,250	6,935	291,872	6,931	* 206,907	7,141	213,176		4
1869-70	-	8,866	494,868	8,907	387,643	4,617	165,778	4,364	131,783		5
1870-71	-	7,490	441,700	7,357	413,267	7,742	284,885	6,057	171,970		6
1871-72	-	4,747	310,550	4,739	307,295	10,765	375,840	9,709	273,195		7
1872-73	-	3,901	225,125	(a) 4,370	208,692	12,840	413,213	(a) 9,075	278,012		8
1873-74	-	6,074	* 411,102	4,050	274,113	7,720	* 374,226	8,374	405,929		9
		Tons Weight of Hull.		Tons Weight of Hull.		Tons Weight of Hull.		Tons Weight of Hull.			
1874-75	-	9,834	* 728,208	7,916	586,180	4,340	* 269,545	3,388	210,419		10
1875-76	-	10,359	* 512,065	10,641	526,005	3,453	* 231,225	3,516	235,444		11
1876-77	-	8,037	* 435,922	7,920	429,576	5,460	* 314,141	5,517	317,421		12

\* The Estimated Value of Shipping in these years was not furnished to Parliament, but the figures inserted have now been obtained by taking the value of the tonnage actually built in these years as a basis for calculating the proportionate value of the tonnage estimated to be built.

(a) The tonnage built in 1872-73 in the Dockyards has been calculated from the actual number of men employed on ship-building in that year.

(b) Including Supplementary Vote of 18,000 £., and corresponding tonnage, for five Schooners for Regulation of Labour Traffic in South Sea Islands.

Note.—From 1865-66 to 1869-70, inclusive, a sum of money was taken annually under Vote 10, Sect. 2, for building and repairing Coast Guard Cruisers by Contract; but the sub-division of the amounts between building and repairing (which was arranged by the late Coast Guard Department) cannot be ascertained. Coast Guard Cruisers are therefore entirely omitted from this statement for the years mentioned.

The



and including also the Total Number of TONS in each Year Estimated for and the TOTAL BUILT respectively compared with the EXPENDITURE (in continuation of Parliamentary Paper, No. 239, of Session 1876).

## C O N T R A C T.

I R O N - C L A D S.				W O O D E N, I R O N, A N D C O M P O S I T E.			
Estimated for.		Actually Built.		Estimated for.		Actually Built.	
Tons (B. M.)	Value.	Tons (B. M.)	Value.	Tons (B. M.)	Value.	Tons (B. M.)	Value.
£.	£.	£.	£.	£.	£.	£.	£.
5,596	306,000	3,020	140,882	968	15,600	933	14,036
1,540	87,000	1,113	92,211	257	4,000	129	4,014
4,543	269,380	4,896	270,037	5,119	181,100	4,628	134,155
10,727	545,000	8,110	494,742	4,492	135,000	4,104	127,947
8,037	404,000	9,862	406,515	562	16,000	1,097	27,895
6,649 including Vote of Credit.	184,000 160,000 from Vote of Credit.	5,210	337,814	1,470 under Vote of Credit.	33,600 from Vote of Credit.	1,301	28,283
5,002	323,278	5,939	287,313	1,237	45,200	750	19,713
489	29,000	428	34,100	(b) 4,037	(b) 116,994	2,219	75,620
nil	nil	nil	nil	6,163	228,766	4,976	176,744
Tons Weight of Hull. 871	50,000	Tons Weight of Hull. 541	31,000	Tons Weight of Hull. (c) 4,752	(c) 316,755	Tons Weight of Hull. 4,635	290,182
3,135	182,500	2,635	208,879	2,718	(d) 199,583	1,924	166,611
3,356	203,100	3,528	218,343	6,909	471,839	7,265	457,478

(c) The tons weight of hull of the "Discovery," purchased for Arctic Service, is not included, not being known. The amount of the purchase-money for the hull has, however, been included to account for the sum Voted.

(d) The amount for Unarmoured Ships includes provision for lengthening and repairing "Orontes" Troop Ship, but no tonnage can be included in respect of the repairs.

The "Dromedary" and "Wye" purchased for Special Transport Service, and subsequently retained in the Navy, are altogether omitted from this statement.

The five Indian Troop Ships and two Troop Tugs, and the Monitors "Abyssinia" and "Magdala," paid for by India; also the "Cerberus," Monitor for "Victoria," mainly paid for by the Imperial Government, are not included in this statement.

NAVY (SHIPS BUILT).

RETURN of the Amount of SHIPPING Estimated for and BUILT from the Year 1865-6 to the Year 1876-7, and including also the Total Number of Tons in each Year Estimated for and the TOTAL BUILT respectively in the ROYAL DOCKYARDS and by CONTRACT, and the MONEY Voted in each Year for BUILDING compared with the EXPENDITURE (in continuation of Parliamentary Paper, No. 239, of Session 1876).

(*Mr. William Henry Smith.*)

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*Ordered, by The House of Commons, to be Printed,  
14 August 1877.*

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# NAVY (SHIPS PAID OFF).

749

RETURN to an Order of the Honourable The House of Commons,  
dated 13 July 1876;—for,

RETURN “of the Number of SHIPS which were put Out of COMMISSION and CREWS PAID OFF during the Years 1873, 1874, and 1875; how many of those Ships’ Crews were Paid Off during those Three Years in *England*; how many were Paid Off in *Ireland*; and how many were Paid Off in *Scotland*; and the Total Amount paid to those Ships’ Crews during those Three Years.”

Admiralty,  
4 August 1876.

THOS. WOLLEY,  
Chief Clerk.

RETURN of SHIPS PAID OFF at HOME and ABROAD during the Years 1873, 1874, and 1875.

	1873.			1874.			1875.		
	Number of Ships.	Number of Men.	Amount.	Number of Ships.	Number of Men.	Amount.	Number of Ships.	Number of Men.	Amount.
			£. s. d.			£. s. d.			£. s. d.
IN ENGLAND - -	24	4,931	35,216 12 9	26	4,785	27,064 14 9	26	5,372	30,293 3 2
IN IRELAND - -	- none -	-	nil -	- none -	-	nil -	- none -	-	nil.
IN SCOTLAND - -	2	267	583 1 -	- none -	-	nil -	- none -	-	nil.
ABROAD - - -	11	911	4,239 4 5	12	1,612	4,267 17 11	9	747	3,309 6 -
TOTAL - - -	37	6,109	40,038 18 2	38	6,397	31,332 12 8	35	6,119	33,602 9 2

NAVY (SHIPS PAID OFF).

RETURN of the Number of Ships which were put  
Out of Commission and Crews Paid Off during  
the Years 1873, 1874, and 1875; how many of  
those Ships' Crews were Paid Off during those  
Three Years in *England*; how many were Paid  
Off in *Ireland*; and how many were Paid Off in  
*Scotland*, and the Total Amount paid to those Ships'  
Crews during those Three Years.

(*Mr. O'Sullivan.*)

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*Ordered, by The House of Commons, to be Printed,*  
*13 February 1877.*

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# NAVY (TRAINING SHIPS).

757

RETURN to an Order of the Honourable The House of Commons,  
dated 1 March 1877;—for,

RETURN “of the Number of TRAINING SHIPS in ENGLISH, IRISH, and SCOTTISH  
WATERS, specifying the Number of BOYS on board each Ship, and the Port in which  
it is Stationed, according to the following Form” :—

	Port.	Number of Pupils.
ENGLAND - - - - -		
IRELAND - - - - -		
SCOTLAND - - - - -		

Admiralty,  
12 March 1877. }

THOS. WOLLEY.  
Chief Clerk.

RETURN of the Number of TRAINING SHIPS in ENGLISH, IRISH, and SCOTTISH  
WATERS, specifying the Number of BOYS on board each Ship, and the Port in which  
it is Stationed.

PORT.	NAME OF SHIP.	BOYS.		
		1st Class.	2nd Class.	Total.
ENGLAND:				
Portsmouth	" St. Vincent " - - - -	253	550	803
	" Boscawen " - - - -	101	503	604
Devonport	" Impregnable " - - - -	330	780	1,110
	" Implacable " (and " Lion " Tender).	321	770	1,091
Falmouth	" Ganges " - - - -	204	315	519
		1,209	2,918	4,127
IRELAND	Nil.	—	—	—
SCOTLAND	Nil.	—	—	—

Admiralty, March 1877.

NAVY (TRAINING SHIPS).

RETURN of the Number of TRAINING SHIPS in  
ENGLISH, IRISH, and SCOTTISH WATERS, specify-  
ing the Number of Boys on board each Ship, and  
the Port in which it is Stationed.

(*Mr. Richard Power.*)

*Ordered, by The House of Commons, to be Printed,  
16 March 1877.*

753

# NAVY (WATERTIGHT COMPARTMENTS).

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RETURN to an Order of the Honourable The House of Commons,  
dated 19 February 1877;—for,

COPY “of ‘The CONTROLLER’S REFERENCE (with all its Enclosures), dated 27th June 1874 (S. <sup>5532</sup>/<sub>6451</sub>),’ referred to by Admiral *Chamberlain* in a Minute or Memorandum covering the Report of the Chief Engineer and the Assistant Chief Engineer of Keyham Yard, dated the 29th day of September 1875 (in continuation of Parliamentary Paper, No. 453, of Session 1876).”

Admiralty,  
12 March 1877. }

THOS. WOLLEY,  
Chief Clerk.

(S. <sup>5532</sup>/<sub>6451</sub>.)

The Controller of the Navy to the Superintendents at Chatham, Sheerness, Devonport, and Pembroke.

Admiralty, S.W., 27 June 1874.

THE Superintendents at Chatham, Sheerness, Devonport, and Pembroke are informed, with reference to the enclosed papers respecting the explosion of gas in the coal-bunkers of the “Devastation,” that provision is to be made in the ventilating system in all ships in future for carrying off any gases generated in the coal-bunkers.

By command of their Lordships,

(signed) *Nathl. Barnaby*,  
for Controller.

Chatham.  
Sheerness.  
Devonport.  
Pembroke.

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## REPORT on Explosion of Gas.

Sir, Her Majesty’s Ship “Devastation,”  
Portland, 1 June 1874.

I HAVE to report that this morning an explosion of gas took place on board Her Majesty’s ship under my command in the starboard centre upper coal-box under the following circumstances: At a quarter before 5 a.m. the two cooks’ assistants, named in the margin, surreptitiously removed the lid of the escape man-hole of the coal-box, which is immediately abreast the officers’ galley in the breastwork deck. Hill carried a naked light, and was seated on the deck, with his feet in the bunker, resting on the coal, and was, it appears, stooping with his light to pick out lumps, when there was an explosion which severely burnt him about the face and neck, rendering his removal to sick quarters necessary. The coal in the bunker was a mixture of two-thirds Welsh to one-third of North-country; it was shipped here on Tuesday last.

F. C. Hill, Captain’s  
cook’s assistant.  
Josh. Curtis, Ward-  
room cook’s assistant.

The bunker was nearly full, and the explosion was confined to the aperture.

The temperature was 66° Fahrenheit, and there was no indication of heat or damp when the box was searched immediately afterwards.

I have, &c.

(signed) *Fred. W. Richards*,  
Captain.

Rear Admiral Geoffrey T. P. Hornby,  
Commanding Channel Squadron.

"Agincourt," at Portland, 2 June 1874.

WITH reference to Circular No. 44 S., 29th July 1869, Captain Richards is to report hereon what precautions are taken to prevent accumulation of gas in the coal-bunkers of the "Devastation."

(signed) *G. Phipps Hornby,*  
Rear Admiral.

Her Majesty's Ship "Devastation,"  
Portland, 3 June 1874.

THE system pursued with the coal-boxes in the "Devastation" is as follows:—

Every morning, after the decks are finished, the escapes are opened, and a Clanny's safety-lamp lowered into every lower box. The boxes remain open during the day, and are closed after coaling quarters.

For keeping the lids watertight, a soft gasket, soaked in oil and coated with tallow, is fitted to each man-hole. These gaskets are removed when coaling, and afterwards the grooves are cleaned, and they are carefully replaced. These precautions were taken after coaling on 26th May, before any water was used on the deck, and there was no indication whatever of water having got into the box in which this accident occurred. The coals were and are perfectly dry.

The Chief Engineer, accompanied by an engine-room artificer, had thoroughly examined the box, and gauged the coal for quantity on Friday the 29th, when there appeared to be no indication of gas being evolved.

The "Devastation" has two tiers of coal-boxes. The lower are all fitted with watertight escapes, which are open daily, as I have stated, for about 12 hours.

The upper boxes are fitted with the usual circular man-holes only. These run the length of the breastwork deck, and, as a rule, these boxes are not opened on Saturday or Sunday, nor had they been on this occasion since they were closed on Friday evening.

Having in view the rapidity with which the gas must have been generated on this occasion, it would be well if escape-valves were fitted to these boxes, when opportunity offers, as it is manifest that the lids of coal-bunkers cannot always be off on a ship's deck.

(signed) *Fred. W. Richards,*  
Captain.

#### "DEVASTATION."

REPORTING explosion of gas in starboard centre upper coal-box on morning of 1st June, and also the means taken for the prevention of such accidents.

(No. 158.)

"Agincourt," at Portland,  
4 June 1874.

Submitted for the information of the Lords Commissioners of the Admiralty.

(signed) *G. Phipps Hornby,*  
The Secretary of the Admiralty. Rear Admiral.

(S. <sup>5225</sup>  
5889.)

Admiralty, S.W., 10 June 1874.

THE enclosed papers, which have been received from Rear Admiral Hornby, respecting an explosion of gas in a coal-bunker of the "Devastation," are forwarded to the Admiral Superintendent at Portsmouth for the opinion of the officers on the subject.

2. The enclosures are to be returned.

Portsmouth. (signed) *William Houston Stewart,*  
Controller.



(No. 1061.)

## Explosion of Gas in a Coal Bunker of H.M.S. "Devastation."

Steam Reserve, Portsmouth,  
15 June 1874.

Sir,

In compliance with your Minute of the 11th instant on Controller's letter, dated 10th June 1874 (S. <sup>5225</sup>/<sub>5839</sub>), desiring me to report my opinion upon the accumulation of gas in the bunkers of the "Devastation," I have the honour to report that it appears from Captain Richards' letter that the bunker-lids were left on from Friday to Monday, during which time the gas accumulated.

2. I am of opinion that all bunkers should be fitted with means for the escape of gas independent of the bunker-lids, which should be taken from the crown, or highest part of each bunker, into the uptake, mast, or ship's side, as might be most convenient; in each case the principle being that each bunker should be fitted with independent means of relieving itself from gas, and I would submit that such means should be fitted to the "Devastation" as soon as possible, and be provided for in the drawings of all ships in future.

I have, &c.  
(signed) *Charles J. Waddilove*,  
Captain of Reserve.

Rear Admiral Sir F. L. McClintock, Knt.,  
Superintendent.

(No. 1061.)

## "DEVASTATION."—Explosion of Gas in Coal Bunkers.

Her Majesty's Dockyard, Portsmouth  
(Master Shipwright and Engineer's Department),  
18 June 1874.

Sir,

In compliance with the directions contained in your memorandum of the 11th, on Controller's letter of the 10th instant (S. <sup>5225</sup>/<sub>5839</sub>), and accompanying reports of the officers of Her Majesty's ship "Devastation," respecting an explosion of gas in the upper coal-bunkers of that vessel, we have the honour to report that we are of opinion, that had the gratings been used frequently in the deck-plates instead of hermetically-sealed covers, as stated (by putting gaskets soaked in oil and coated with tallow), the explosion would not have taken place.

In order to prevent a like occurrence, and to avoid the inconvenience of having the covers removed in the deck within the breastwork, we would suggest that ventilators may be fitted between the beams, as shown in red on the accompanying sketch.

The enclosures are returned herewith, as directed.

We have, &c.  
(signed) *W. B. Robinson*,  
Master Shipwright and Engineer.  
*H. Froyne*,  
Assistant Master Shipwright.

Forwarded.  
(signed) *F. L. McClintock*,  
Admiral Superintendent.

18 June 1874.

(S. <sup>5532</sup>  
6450.)

The Controller of the Navy to the Admiral Superintendent at Portsmouth.

Admiralty, S.W., 27 June 1874.

THE Admiral Superintendent at Portsmouth is requested to inform the officers that the proposal, in their letter of the 18th instant, to fit additional ventilators in the "Devastation" is approved.

2. In future, provision is to be made in the ventilating system in all ships for carrying off any gases generated in the coal-bunkers.

By command of their Lordships,

(signed) *Nathl. Barnaby,*  
for Controller.

Portsmouth.

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Potomack Yard

18 June 1874

Potomack Yard

## "DEVASTATION"

Sketch shewing in red, proposed additional ventilation of Coal Bunkers between decks; the only means of ventilation at present being through the Gratings in the Coaling Scuttles when the covers are removed.

A. D. Williams

Chief Constructor

Scale  $1\frac{1}{2}$ " = 1 FootScale  $1\frac{1}{2}$ " = 1 Foot

Note. This is a copy of the sketch circulated with the Controller's letter S- $\frac{2632}{2481}$  of 27 June 1874.  
The water line has been added in the Admiralty

A. D.





















